Guideline

Breastfeeding Guidelines

Document Number:	SWSLHD_GL2020_016
Functional Sub-Group:	Maternity
Summary:	To provide referenced, current breastfeeding information for health workers in the SWSLHD, in an effort to reduce conflicting advice.
Approved by:	Women's Health Clinical Stream
Publication (Issue) Date:	October 2020
Next Review Date:	October 2025 This document is regularly reviewed and updated in line with changes in practice and evidence of best practice. Different sections may be updated at different times, with the most recent review date noted on each section.
Replaces Existing Policy:	SWSLHD_GL2016_016 - Breastfeeding Guidelines 2016
Previous Review Dates:	May 2019 January 2010 2008

NOTE

The SWSLHD Breastfeeding Guidelines should be referred to when providing breastfeeding care and advice to women in SWSLHD.

This document is continually updated and staff should refer back to this document to ensure they are accessing the most up to date information. Sections may be added or reviewed as required, with the most recent review date noted on each section.

The related parent/carer handouts are available via the Policies, Procedures and Guidelines (PPG) Intranet page under Key Documents.

Review Process

Document Lead Reviewer	Clinical Midwifery Consultant, Lactation and Infant feeding (Annette Wright)
Document Owner	Clinical Manager, Women's Health Clinical Stream
Document Sponsor	Clinical Director, Women's Health Clinical Stream
Stakeholders Consulted	SWSLHD Breastfeeding Reference Committee, including representatives of: - Bankstown Lidcombe Hospital - Bowral District Hospital - Campbelltown Camden Hospitals - Fairfield Hospital - Liverpool Hospital - Primary and Community Health - Population Health - Allied Health - Australian Breastfeeding Association - Consumer representative

Approval Process

Committee Name	Endorsement/Approval Date
SWSLHD Maternity Policy Committee	10/06/2020

Revision History

Version	Amendment Notes
September 2020 SWSLHD_GL2020_016	Updates to ten steps successful breastfeeding; background; and antenatal responsibilities up to antenatal expressing (up to page 15). Parent handouts have been separated from the document and uploaded as a key document to support staff use.
May 2019 SWSLHD_GL2016_016	Re-issued with change to Breastfeeding and Radiological Procedures (Thyroid scan – Radioactive Iodine^{131}).
May 2016 SWSLHD_GL2016_016	Document published as a District guideline and made available on the Policies & Guidelines Intranet page.

South Western Sydney Local Health District

Breastfeeding Guidelines

CONTENTS

Related parent/carer handouts are available on the Intranet (LINK)

Acknowledgements

History of Development and Review

In July 2004, the NSW Minister for Health announced the consolidation Area Health Services from 17 to 8 and on 1st January 2005 the former Central Sydney and South Western Sydney Area Health Services were merged to form Sydney South West Area Health Service (SSWAHS). On July 1st 2011, following amendments to the Health Services Act 1997, SSWAHS was dissolved to form South Western Sydney Local Health District (SWSLHD) and Sydney Local Health District (SLHD).

These Breastfeeding Guidelines were first developed by the Central Sydney Area Health Service (CSAHS) in 2008. Permission was given to use it as the basis for the second edition for the merged SSWAHS in 2010. This third edition has been revised by both SLHD and SWSLHD staff and published separately in 2014 and 2016 for each LHD with local adaptations. We recognise the contribution that previous lactation consultants at Liverpool, RPA and Canterbury Hospitals made to the development of this document up to 2016. In 2020 the document was re-issued by SWSLHD as a fluid document that will be continually updated. Sections may be added or reviewed as required, with the most recent review date noted on each section.

Front Cover: Baby Roxie Joye Raines enjoying a breastfeed.

SWSLHD does not accept any liability to any person for the information or advice (or use of such information or advice) provided in these guidelines or incorporated into them by reference. We provide this information on the understanding that all health practitioners accessing them take responsibility for assessing their relevance and accuracy.

SWSLHD Breastfeeding and Safe Infant Feeding Policy Statement

Health facilities in SWSLHD support and encourage safe feeding for all babies. A comprehensive document which describes our practice in relation to infant feeding is available on request.

As breastfeeding is recognised as the best method of infant feeding, the facility provides staff with regular breastfeeding education about appropriate practice to support women in initiating and establishing breastfeeding. We also support staff to continue breastfeeding their own baby when they return to work and provide facilities for this purpose.

All women are given access to clear and correct information about the benefits of breastfeeding for themselves, their babies and their families and receive information that will help to increase their skills and confidence to breastfeed. This information includes:

- Placing the baby skin-to-skin immediately after birth to promote bonding (regardless of infant feeding choice)
- Keeping mother and baby together for their hospital stay so that mother gains confidence in recognising and responding to baby's cues
- Encouraging unrestricted access to the breast
- Providing skilled assistance to work through breastfeeding challenges
- Avoiding giving the baby anything other than breastmilk
- Avoiding the use of teats or Pacifiers for normal healthy babies as this may reduce the chance of successful breastfeeding
- Assistance to initiate and maintain their milk supply if mother and baby are separated for any reason e.g. prematurity

If a mother has made a decision to use infant formula, individual instruction on safe preparation and the giving of the formula of her choice will be provided.

All mothers, before leaving hospital, are given written information about professional community support e.g. Early Childhood Nurse, as well as mother to mother support e.g. Australian Breastfeeding Association

SWSLHD endorses the WHO/UNICEF International Code of Marketing of Breastmilk Substitutes.

Background information

Aim

The aim of these guidelines is to provide referenced, current breastfeeding information for health workers in the SWSLHD, in an effort to reduce conflicting advice. It covers all aspects related to the initiation, establishment and maintenance of lactation in the healthy newborn and the mother who has expressed her intention to breastfeed. It is intended that these Guidelines will continue to be updated on a regular basis and the format of this document should enable this to occur easily. Health workers within SWSLHD may photocopy any page or accompanying mother's handouts. If used outside SWSLHD due acknowledgement must be given to any reproduction.

Australian Statistics

The World Health Organization (WHO) recommends exclusive breastfeeding to the age of 6 months and sustained breastfeeding together with adequate complementary foods thereafter for up to 2 years of age or beyond. These guidelines have been adopted in Australia.

It is estimated 90-96% of women initiate breastfeeding in Australia [2)]. The Australian Infant Feeding Survey (2010) reported the proportion of babies receiving *any breastfeeding* declined to 74.6% at 1 month, 68.7% at 4 months and 60.1% at 6 months. Breastfeeding to 13-18 months was just over 18% and 7.4% of women breastfed to 18-24 months.

Almost three quarters of infants (74.4%) were fully breastfed at 1 month of age, which means that they received breastmilk as the main source of nourishment, but took some other liquids such as water, water-based drinks, fruit juices and medicinal drops or syrups (but not breastmilk substitutes or solids). The proportion of fully breastfed infants decreased to 27% at 6 months and to 2.5% at 12 months of age.

Definitions

Fully breastfeeding: they received breastmilk as the main source of nourishment, but took some other liquids such as water, water-based drinks, fruit juices and medicinal drops or syrups (but not breastmilk substitutes or solids).

Exclusive breastfeeding, which describes feeding with only breastmilk and no other liquids or solids with the exception of medical drops or syrups.

Any breastfeeding: Received some breastmilk but also had breastmilk substitutes

In New South Wales (NSW), mothers reported that 25% of infants were exclusively breastfed at 6 months of age in 2012. Although well below the recommendations, this data shows an improving trend in breastfeeding in NSW compared to 2006 when 16.2% of infants were *exclusive breastfed* at 6 months of age.

A NSW Population Health survey indicated poorer breastfeeding practices amongst less privileged and younger mothers (less than 25yrs old). Mothers born in Asia are amongst the earliest of the ethnic groups to stop breastfeeding. The early decline in breastfeeding rates means a loss of important health benefits to these babies and therefore a greater cost to Australia's economy.

In 2006 the Breastfeeding in NSW: promotion, protection and support policy was released and this policy was reviewed in 2011 and again in 2018, with the aim of providing direction for NSW Health and Local Health District on how to promote, protect and support breastfeeding in the community and among staff.

National Breastfeeding Strategy 2019 Link
NSW Ministry of Health PD2018_034- Breastfeeding in NSW - Promotion, Protection and Support
National Health & Medical Research Council (2012) *Eat for health infant feeding guidelines information for health workers*. Canberra: National Health and Medical Research Council.
Australian Institute of Health and Welfare 2011. 2010 Australian National Infant Feeding Survey: indicator results. Canberra: AIHW
NSW Ministry of Health Exclusive Breastfeeding at 6 months - http://www.healthstats.nsw.gov.au/indicator/beh_breastfeed_age

The International Code for Marketing of Breastmilk Substitutes (The WHO Code)

The development and adoption of the International Code of Marketing of Breastmilk Substitutes occurred in 1981 at the World Health Assembly and Australia was a signatory to this Code. The aim of the Code is to contribute to the provision of safe and adequate nutrition for infants by the protection and promotion of breastfeeding. It also aims to ensure the proper use of breastmilk substitutes when these are necessary, on the basis of adequate information and through appropriate marketing and distribution. The Code applies to all products marketed as partial or total substitutes for breastmilk and includes infant formula, bottles and teats.

The MAIF agreement marketing in Australia of Infant Formulas

Refers to the voluntary agreement by manufactures of infant formulas The MAIF Agreement has operated since 1992, as a voluntary, self-regulatory, code of conduct between the manufacturers and importers of infant formula in Australia. It is Australia's response to the World Health Organization's *International Code of Marketing of Breast-milk Substitutes 1981* (WHO Code). The MAIF Agreement applies to those Australian manufacturers and importers of infant formula who are signatories to the MAIF Agreement.

The MAIF Agreement aims to contribute to the provision of safe and adequate nutrition for infants, by protecting and promoting breastfeeding and by ensuring the proper use of breast milk substitutes, when they are necessary, on the basis of adequate information through appropriate marketing and distribution. Complaints about breeches in marketing of infant food products can be directed through MAIF. Forms are available from the Australian Government Department of Health website (Link).

Innocenti Declaration

Produced in 1990 setting international standards for breastfeeding – "Empowerment of all women to exclusively breastfeed their children for 4-6 months and to continue breastfeeding with complementary food well into the second year of life".

In 2001 the World Health Assembly acting on a recommendation from the WHO Expert consultation recommended exclusive breastfeeding for 6 months with the introduction of complementary food and continued breastfeeding thereafter.

In 2005, the Global Strategy operational targets recommended protection, promotion and support of exclusive breastfeeding for six months and continued breastfeeding up to two years of age or beyond, while providing women access to the support they require – in the family, community and workplace.

Baby Friendly Health Initiative

The Baby Friendly Health (previously Hospital) Initiative, a global accreditation process, was launched in 1991 by the WHO and the United Nations Children's Fund with the aim of improving breastfeeding rates by encouraging hospitals to implement the "Ten Steps to Successful Breastfeeding" as a minimal standard and adopt practices that "protect, promote and support" breastfeeding. Hospitals can apply for this status and are assessed by an external team of trained assessors. Once awarded, this accreditation lasts for three years, then a further reassessment must be undertaken to retain the status.

Hospitals that are awarded this status can then be easily identified as being up to date in their approach to breastfeeding. The NSW Ministry of Health Breastfeeding policy (2011) supports the implementation and maintenance of Baby Friendly Health Accreditation for health services, including compliance with the Who code.

World Health Organization. Infant and young child nutrition. Global strategy on infant and young child feeding. Geneva: WHO, 2002.
NSW Ministry of Health PD2018_034- Breastfeeding in NSW - Promotion, Protection and Support
The Health of Children and Young People in NSW: Report of the Chief Health Officer 2014, Centre for Epidemiology and Evidence: NSW Ministry of Health

Australian Government Department of Health: Marketing in Australia of Infant Formulas: Manufacturers and Importers Agreement

Ten Steps to Successful Breastfeeding[1]

Critical management procedures:

1a. Comply fully with the *International Code of Marketing of Breast-milk Substitutes* and relevant World Health Assembly resolutions.

1b. Have a written infant feeding policy that is routinely communicated to staff and parents.

1c. Establish ongoing monitoring and data-management systems.

2. Ensure that staff have sufficient knowledge, competence and skills to support breastfeeding.

Key clinical practices:

3. Discuss the importance and management of breastfeeding with pregnant women and their families.

4. Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.

5. Support mothers to initiate and maintain breastfeeding and manage common difficulties.

6. Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.

7. Enable mothers and their infants to remain together and to practise rooming-in 24 hours a day.

8. Support mothers to recognize and respond to their infants' cues for feeding.

9. Counsel mothers on the use and risks of feeding bottles, teats and pacifiers.

10. Coordinate discharge so that parents and their infants have timely access to ongoing support and care

1. WHO Ten steps to successful breastfeeding Link
2. Protecting, Promoting and Supporting Breastfeeding: The Special Role of Maternity Services. WHO/UNICEF Statement. Geneva 1989; updated 2020 BFHI.org.au Link

Seven Point Plan for Community Health Services

1. Have a written breastfeeding policy that is routinely communicated to all staff and volunteers
2. Educate all in the knowledge and skills necessary to implement the Breastfeeding policy
3. Inform all pregnant women and their families about breastfeeding being the biological normal way to feed a baby and about the risks associated with not breastfeeding
4. Support mothers to establish and maintain exclusive breastfeeding for 6 months
5. Encourage sustained breastfeeding beyond six months with the appropriate introduction of complimentary foods
6. Provide a supportive atmosphere for breastfeeding families and or all users of the service
7. Promote collaboration between staff and volunteers, breastfeeding support groups and the local community in order to promote, protect and support breastfeeding

Neo-BFHI: The Baby-friendly Hospital Initiative for Neonatal Wards

Three Guiding Principles and Ten Steps to protect, promote and support breastfeeding.

Three Guiding Principles

Guiding principle 1 Staff attitude to the mother must focus on the individual mother and her situation

Guiding principle 2 The facility must provide family centred care, supported by the environment.

Guiding principle 3 The health care system must ensure continuity of care from pregnancy to after discharge of the infant

Expanded Ten Steps to Successful Breastfeeding

Step 1. Have a written breastfeeding policy that is routinely communicated to all health care staff

Step 2. Educate and Train all health care staff in the specific skills and knowledge necessary to implement this policy

Step 3. Inform hospitalised pregnant women at risk of preterm delivery or birth of a sick infant about the benefits and management of breastfeeding

Step 4. Encourage early continuous mother infant skin to skin contact/Kangaroo mother care

Step 5. Show mothers how to initiate and maintain lactation and establish early breastfeeding with infant stability as the only criterion

Step 6. Give newborn infants no food or drink other than breastmilk, unless medically indicated

Step 7. Enable mothers and infants to remain together 24 hours a day.

Step 8. Encourage demand feeding or when necessary semi demand feeding as a transitional strategy for preterm or sick infants

Step 9. Use alternatives to bottle feeding at least until breastfeeding is well established, use pacifiers and nipple shields for justifiable reasons

Step 10. Prepare parents for continued breastfeeding and provide access to support services/groups after hospital discharge

Compliance with WHO code and resolutions

1. NSW Ministry of Health PD2018_034 - Breastfeeding in NSW: Promotion, Protection and Support
2. Australian College of Midwives - Neo-BFHI Core Document

Summary of the WHO/UNICEF International Code of Marketing of Breastmilk Substitutes

Summary of Main Points:

- No advertising of breast milk substitutes, teats and bottles
- No donations of breast milk substitutes, teats and bottles to maternity hospitals
- No free samples to mothers
- No promotion in the health services
- No company personnel to advise mothers
- No gifts or personal samples to health workers
- No use of space, equipment or educational materials sponsored or produced by companies when teaching mothers about infant feeding
- No pictures of infants or other pictures idealising artificial feeding
- Information to health workers about artificial feeding should be scientific and factual
- Information on artificial feeding, including labels, should explain the benefits of exclusive breastfeeding and the costs and risks associated with artificial feeding
- No promotion of products unsuitable for infant feeding, such as condensed milk or evaporated milk

The role of administrators and staff in upholding The Code:

- Free or low-cost supplies of breast milk substitutes should not be accepted in health care facilities.
- Breast milk substitutes should be purchased by the health care facility in the same way as other foods and medicines, for at least wholesale price. Promotional material for infant foods or drinks other than breastmilk should not be permitted in the facility.
- Pregnant women should not receive materials that promote artificial feeding.
- Feeding with breast milk substitutes should be demonstrated on an individual basis by health workers only, and only to the mothers or family members who need to use them.
- Breast milk substitutes in the health facility should be kept out of sight.
- The health facility should not allow sample gift packs with breast milk substitutes or related supplies that interfere with breastfeeding to be distributed to pregnant women or mothers.
- Financial or material inducements to promote products within the scope of the Code should not be accepted by health workers or their families.
- Manufacturers and distributors of products within the scope of the Code should disclose to the institution any contributions made to health workers such as fellowships, study tours, research grants, conferences, or the like. Similar disclosures should be made by the recipient.

1 BFHI Information Pack (2019) Leaflet 4-Summary Of Who Code. Adapted from *Promoting breastfeeding in health facilities: A short course for administrators and policy-makers*. World Health Organization and Wellstart International, Geneva, Switzerland, revised as Section 2 of this BFHI series. UNICEF/WHO BFHI Section 4: Hospital Self-Appraisal and Monitoring 2019

Infant Formula Company Representatives

Policy Statement

SWSLHD promotes exclusive breastfeeding for infant nutrition for the first six months of life and support to continue breastfeeding with the appropriate introduction of solids for as long as the mother chooses. SWSLHD also supports mother's choice in the use of infant formula but does not support the promotion of infant formula to the general public. This includes the display of any material which refers to a product that is within the scope of the World health organisation Code.

Under no circumstances are promotional material or product samples to be left with or accepted by any staff member.

Principles/Guidelines

Managers of Maternity & Community Services require product information for the education of staff and therefore the following standards have been formulated:

Formula company representatives are only to contact the nominated personnel below, at each facility, for the purpose of making an appointment to discuss their products. If any clinical staff member is contacted he/she must refer the formula company representative to the nominated personnel at their facility. This nominated person is then responsible for ensuring that the information is disseminated to staff without being in breach of the WHO Code.

Nominated personnel are:

- Clinical Stream Manager – Women's and Children's Health & Community Services
- Nurse Manager – Women's and Children's Health Community Services
- Nursing/Midwifery Unit Manager – Women's and Children's Health & Community Services
- Clinical Nurse/Midwifery Consultant – Women's and Children's Health & Community Services
- Clinical Nurse Consultant/Specialist (Lactation) – Women's and Children's Health & Community Services
- Designated Medical Staff
- Dietitians

1. WHO/UNICEF Protecting, Promoting and Supporting Breastfeeding: The Special Role of Maternity Services. WHO/UNICEF Statement. Geneva 1989; updated 2020 BFHI.org.au Link
2. Department of Health and Ageing (1982) Marketing in Australia of Infant formulas: Manufacturers and Importers Agreement (MAIF Agreement)
3. Ministry of Health PD2018_034 Breastfeeding in NSW: Promotion, Protection and Support

Antenatal Responsibilities

Antenatal Breastfeeding Education

Needs and/or Problems	Action	Rationale	Desired Outcome
Antenatal breastfeeding education to enable the mother to make an informed decision	Give mother appropriate breastfeeding literature early in pregnancy including information about education providers	Mother is encouraged to think about the importance of feeding for her baby	Mother is able to make an informed decision about breastfeeding
	Encourage mother and her partner or support person to attend antenatal classes	Breastfeeding education in the first or second trimester is more effective as the focus shifts to the birth in the third trimester	Attendance of the partner/support person encourages on-going support
Appropriate antenatal education	The following information should be included in classes or given individually by the antenatal care provider: • Why breastfeeding is important for mother and baby and the risks associated with not breastfeeding	• Parents need to know the advantages of breastfeeding and cost of alternatives. There is considerable evidence to suggest that there are significant health advantages for mothers who breastfeed their infants	Mother feels supported Mother chooses to breastfeed
	• Importance of early-uninterrupted skin-to skin contact and the first feed.	• Babies given early skin to skin contact and are kept with their mothers from birth have been found to breastfeed for longer.	
	• Why 24hour rooming-in (staying with the baby) is important and how to recognise when the baby is ready to feed	• Allows mother to respond to baby's needs and aids initiation of lactation • Success is attributed to the ability to cope with problems as they arise	
	• Why bottles and teats and pacifiers are discouraged while breastfeeding is being established	• These can interrupt the natural process of breastfeeding and milk production.	
	• It is recommended that babies be breastfed until two years of age and beyond. The first six months of which should be exclusive breastfeeding followed by the gradual introduction of solids.	• Parents need to be aware of how long they can breastfeed for	
	• Basic breastfeeding and lactation management, including positioning and attachment, feeding cues and frequency of feeding	• Empowering the mother by teaching her practical skills will increase her confidence and she will have an awareness of what is	

	• Indications that a baby is getting enough milk • Maintaining and increasing milk supply • Breastfeeding support groups and services in the community and identifying women with previous breastfeeding problems or other special needs	normal.	
	• Advice on prenatal nipple care – handling breasts, avoiding drying agent	• Specific nipple preparation is not considered necessary however there are advantages in encouraging women to be comfortable with handling their own breasts	

1. BFHI Australia, 2020, The Global Criteria for Baby Friendly Hospitals in Australia
2. Brodribb W (4th ed) 2012, Breastfeeding Management in Australia, Australian Breastfeeding Association
3. National Health and Medical Research Council (2012) Infant Feeding Guidelines. Canberra: National Health and Medical Research Council, 2012.

Antenatal Breast History and Examination

Needs and/or Problems	Action	Rationale	Desired Outcome
Prenatal history relevant to breastfeeding	• Previous breastfeeding experience: - How many children - Duration of breastfeeding - Reason for ceasing	• Appropriate anticipatory guidance can be given.	Mother makes an informed decision and feels comfortable about breastfeeding with appropriate support
	• Previous breast surgery, infections, trauma, etc • Chronic diseases or conditions • Plans to return to work • Family Support	• Correct information on overcoming difficulties will empower the woman and increase her confidence to succeed.	
	• Regular medication or tobacco use	• May need advice on how medication and/or tobacco use may impact on lactation	Referral to appropriate resources e.g. Lactation Consultant, Quit Program (if available)
Breast examination	• Systematic inspection and assessment of breasts and nipples noting any of the following: - Lumps - Scars - Eczema or dermatitis - Breast hypoplasia - Nipple anomalies	• Specific problems may be addressed early and appropriate counselling given.	
	• Reinforce the information that no breast/nipple preparation is necessary	• No evidence has been found to support application of creams, expressing of colostrum etc.	Referral to appropriate resources e.g. Lactation Consultant, Breast Surgeon if necessary

1 National Health and Medical Research Council (2012) *Infant Feeding Guidelines*. Canberra: National Health and Medical Research Council, 2012.

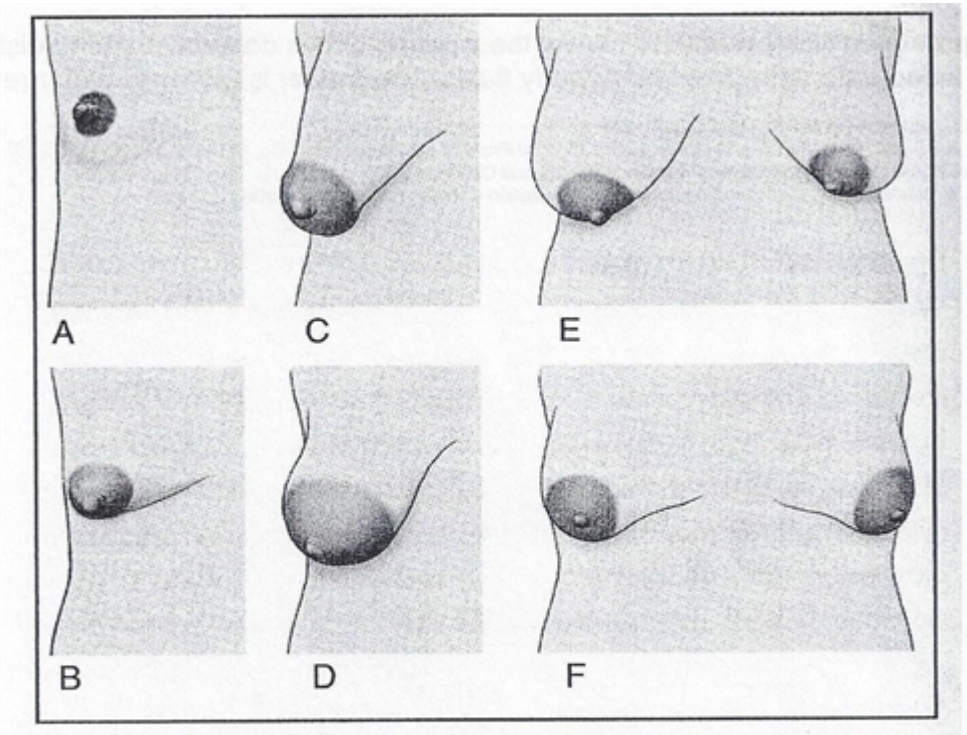
Breast Hypoplasia

Breast hypoplasia is insufficient development of mammary glands. Small breasts do not mean hypoplasia. Clinical features include:

- Greater than 4 cm spacing between the breasts,
- Breasts may be asymmetrical
- May have small breast base (less than between 2nd and 6th rib)
- Areola may be disproportionately large or bulbous,
- Many women report few if any breast changes during pregnancy,

Whilst breast hyperplasia is associated with low supply, it has been found that 39% of women with clinical features of breast hypoplasia were able to meet their baby's nutritional needs with exclusive breastfeeding when they had lactation support postnatally.

If breast hypoplasia is suspected adopt a "wait and see" approach. The mother should be encouraged to breastfeed but also informed of the importance of early postpartum follow up for her baby to ensure adequate nutrition. In the antenatal period she may be educated on postnatal strategies to optimise her supply such as frequent breastfeeding in the first few days as well as hand expressing pc. Motilium may also be used from early as 5 days. If long term supplementation with a breast milk substitute is necessary, consider use of a (supply line) nursing supplementer.



Hypoplasia variations: A—incomplete development before puberty; B—poorly developed upper portion, scant lower tissue; C—tubular with bulbous areola; D—long, bowed to outside, with extra-large areola; E—classic wide-spaced and uneven; F—wide-spaced with scant tissue.

1 West, D & Marasco, L. (2009) The Breastfeeding Mothers Guide to Making More Milk, p110
2. Huggins K, Petok, E & Mireles O. (2000), "Markers of Lactation Insufficiency: a study of 34 mothers". Clinical Lactation, pp 25-35.

Standard Precautions

NSW Health Infection Control policy states that "Standard Precautions apply to all patients receiving care in health organisations regardless of their diagnosis or presumed infection status".

Included in this are **"all body substances, secretions and excretions (excluding sweat), regardless of whether or not they contain visible blood"**. Breastmilk is not specifically mentioned, despite the fact that both the World Health Organisation and The Centre for Disease Control in the USA specify that these precautions should not apply to breastmilk.

Human breastmilk has been implicated in perinatal transmission of HIV, and HBsAg has been found in breastmilk of mothers infected with HBV. However, occupational exposure to human breastmilk has not been implicated in the transmission of HIV nor HBV infection to health-care workers. Moreover, the health-care worker will not have the same exposure to breastmilk as the nursing neonate. Whereas universal or standard precautions do not apply to human breastmilk, gloves may be worn by health-care workers in situations where exposures to breastmilk might be frequent, for example, in breast milk banking.

SWSLHD has approached NSW Health to review the wording of this document and to distinguish breastmilk as a separate entity from other body fluids. The matter is currently under review.

1. NSW Health; PD2010_019 - Maternity- Breastmilk: Safe Management 2010.
2. Lawrence, R.A & Lawrence, R.M., Breastfeeding, *A Guide for the Medical Profession (7th Ed)*, 2011, Mosby Co, St Louis.
3. Riordan, J. & Wambach, K., *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA

Antenatal Expressing

Needs and/or Problems	Action	Rationale	Desired Outcome
A mother with an increased risk of separation from her infant at birth or an infant at higher risk of requiring supplementation, and who wishes to breastfeed may consider antenatal expressing after 36 weeks	Counsel the mother on her pregnancy risk High risk pregnancy includes: • Cervical suture, • threatened preterm labour, • antenatal bleeding of any kind, • Twin pregnancy <36 weeks, placenta previa	It is safe for mothers with low risk pregnancy's who's babies are at an increased risk of supplementation e.g. gestational diabetic to express from 36 weeks[1] Evidence of the safety for high risk pregnancies has not yet been studied[1] There is a theoretical risk of inducing labour.	Mothers with high risk pregnancy are excluded from antenatal expressing
	Educate the mother on how to hand express (usually twice a day) Instruct her on the correct labelling and storage of colostrum, using parent handout	Hand expressing is a skill that needs to be demonstrated All expressed colostrum needs to be labelled correctly with date time of expressing and name of the mother to ensure that the infant receives the correct colostrum	Mothers are aware of how to safely collect and store colostrum Patient Handout available (click here) Mothers are counselled and educated on the benefits of antenatal expressing
Mothers are aware of how to safely collect and store colostrum Mothers are counselled and educated on the benefits of antenatal expressing	Services should provide adequate storage facilities for antenatally expressed breastmilk once the mother has been admitted • Ensure EBM is correctly labelled with MRN • EBM is stored within the guidelines of hospital policy Nurseries and staff are aware that the stored colostrum is available for the baby post delivery EBM should remain frozen till required and used within 24 hours when defrosted	Colostrum is stored and identified safely and is available to staff to give to the baby when needed Antenatally expressed colostrum is used in preference to infant formula when babies require supplementary feeds	Milk remains in date and available for use post birth Baby receives only breastmilk if supplementation is required

1. Forster DA, Moorehead AM, AMire LH, Jacobs SE,Davis PG Walker SP, McEgan K, Opie GF, Donath SM. *Diabetes and antenatal milk expressing (DAME) a random controlled trial* The Lancet 2017 June
2. Lawrence, R.A & Lawrence, R.M., Breastfeeding, A Guide for the Medical Profession (7th Ed), 2011, Mosby Co, St Louis.
3. Chapman, T., Pincombe, J., Harris, M. *Antenatal Breast Expression: A review of the literature*, Midwifery 2012DOI. 10.1016/jmidw2011.12.013

Breastfeeding during Pregnancy and Tandem Feeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Pregnancy Mother is pregnant and wishes to continue breastfeeding another child	• Reassure mother that she can continue to breastfeed during the pregnancy without any known risk to the baby she is expecting	• In mothers with no history of miscarriage or premature labour, breastfeeding through pregnancy carries no added risk • Breastfeeding the toddler does not deprive the unborn child of any nutrients needed to grow	
Maternal nutrient and energy needs	• Encourage mother to have a well-balanced diet and plenty of rest	• Both pregnancy and breastfeeding increase requirements for energy, protein, iron, folic acid and vitamin C	
Nipple discomfort	• Reassure mother that some degree of nipple discomfort may occur during breastfeeding, varying greatly in degree and duration.	• Appears to be related to hormonal changes during pregnancy and is unlikely to respond to any special treatment	
Decline in milk supply	• Reassure mother	• 70% mother report a decrease in milk production during a subsequent pregnancy	
Change in taste of milk	• Reassure mother	• Lactose in milk decreases, whilst sodium increases, changing the taste	
Child decides to wean	• Reassure mother	• Some children wean because of decline in milk volume and change in taste	
Uterine Contractions	• Reassure mother	• There is no documented danger to foetus or mother when mothers breastfeed through a healthy pregnancy and no other risk factors are present	
Preparation of toddler for baby's arrival	• Encourage mother to develop some pattern with breastfeeding the toddler e.g. morning and night	• This may make managing the breastfeeding post birth a little easier	Mother is happy with her decision and toddler adjusts to the situation

Breastfeeding during Pregnancy and Tandem Feeding (continued)

Needs and/or Problems	Action	Rationale	Desired Outcome
After birth Availability of colostrums	• Reassure mother that colostrum is available for the newborn post birth for a short period • Mother should consider having 24 hours of getting to know her newborn and ensuring positioning and attachment are correct • Mother should be encouraged to feed the newborn before the toddler.	• Mother has the opportunity to concentrate on the newborn's needs	Newborn initiates breastfeeding and obtains colostrum
Ongoing Abundant milk supply – baby not coping with fast flow	• Consider giving each child their own breast or feed the toddler first until the flow subsides	• Each child's needs are being met	Tandem feeding progresses well

1. Lawrence, RA & Lawrence, R.M., Breastfeeding, *A Guide for the Medical Profession (7th Ed)*, 2011, Elsevier Mosby co, St Louis
2. Australian Breastfeeding Association, *Breastfeeding through Pregnancy and Beyond*, Booklet Series, 2002, Victoria
3. Riordon J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA

Establishing Breastfeeding

How Does Breastfeeding Work?

Significant work in relation to infant demand and maternal milk supply has been undertaken over the last decade making it easier for clinicians to have a better understanding of how breastfeeding works and to be able to counsel the mother accordingly.

Endocrine (Hormonal) Control

Milk is produced in the glandular epithelial cells within the breast and is stored in clusters of alveoli. Each alveolus is surrounded by myoepithelial (muscle) cells. Adequate milk production is thought to be initially dependent on two main factors:

- Prolactin release from the anterior pituitary, which stimulates milk manufacture and is usually triggered by the baby's sucking which in turn stimulates the nerve endings in the nipple and areola.
- Oxytocin release from the posterior pituitary, which causes the myoepithelial cells to contract and allow the manufactured and stored milk to be released and pushed down the duct system towards the nipple. This process is commonly known as "let-down". Removal of milk is then made possible by the rhythmical pressure of the baby's sucking. (It was always thought that the milk drained into lactiferous sinuses situated close to the nipple, but research using ultrasound has been unable to successfully identify these "sinuses").

Autocrine (Local) Control

The two most important factors in successful lactation are a) the efficient removal of milk from the breasts and b) the ability of the correctly latched baby to feed to need. The lactating breast exercises a local feedback control known as autocrine control. Two local mechanisms are thought to control this: feedback inhibitor of lactation (FIL) which is a component of whey fraction in the Breastmilk and prolactin receptor theory. When FIL reduces as the milk is removed from the breast the milk synthesis speeds up and when the alveoli cell is distorted due to milk fullness the prolactin cannot bind to the receptor at the base of the cell. This action is thought to match the rate of milk production to the amount of milk removed and comes into play in the early weeks of lactation.

The average mother's potential for milk production is much greater than the average baby's appetite. The wide range of milk intake by babies is due more to variations in demand than to limitations in milk production.

Variations in Breastmilk Content

The volume of milk available to the baby is greater in the early part of the feed however breastmilk fat levels rise as the milk flow lessens with subsequent let-downs. The change in fat content highlights the importance of baby-led feeding and letting the baby finish the feed in his own time rather than according to the clock.

1. Ramsay D, *Ultrasound Visualises Breastfeeding Problems*, 2002. Australasian Science, April p34-35
2. Victorian Breastfeeding Guidelines, Promoting Breastfeeding, 2014
3. The Royal College of Midwives 2012, Evidence Based Guidelines for Midwifery-Led Care in Labour. The Royal College of Midwives
4. Kent, J. How *Breastfeeding works 2007* Journal of Midwifery Women's Health 52:564-570
5. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett
6. Daly S & Hartmann P, Infant Demand and Milk Supply, Part I: Infant Demand and Milk Production in Lactating Women, 1995. J Hum Lact II (1), p21-26

Nutritional Properties of Breastmilk (per 100mls)

COMPONENT	FUNCTION	FULLTERM		PRETERM	
		COLOSTRUM	MATURE	COLOSTRUM	MATURE
Calories	Total energy value	67	65-75	58	71
Water	A vehicle for all constituents and regulation of hydration	85.1	87.5		
Proteins	Energy Value 5% Whey Casein ratio Amino acids (19) - essential for human development	1.8g 90:10	1.3g 60:40	2.1g	1.4
I. Whey	α-lactalbumin - milk synthesis Immunoglobulins - protection Lactoferrin– aids iron absorption Enzymes (40+) Aids digestion & stimulates development Hormones Growth factors – develops CNS	218mg 364mg 330mg	161mg 142mg 167mg		
II. Casein	Easily digested curd	140mg	187mg		
Carbohydrates	Energy Value 38% I. Lactose – major component, aids calcium & iron absorption II. Monosaccharides III. Oligosaccharides – active against pathogens IV. Glucose – CNS development V. Galactose – CNS development	5.1g	7.2g	5.1g	6.0g
Lipids	Energy Value 50% Saturated : Unsaturated (%) Develops CNS & immune system Most variable component Contains fat soluble vitamins Contains 167 fatty acids Triglycerides are at 98%	1.8g	3.5g 42 : 58	3.0	4.1g
Minerals (Monovalent Ions)	Renal solute load low Calcium Magnesium Sodium Potassium Chlorine Phosphorous Sulphur Zinc	0.4% 23mg 3.4mg 28mg 74mg 91mg 14mg 22mg 0.54mg	 28mg 3.0mg 15mg 58mg 40mg 15mg 14mg 0.16mg	 29mg 3.0mg 22mg 58mg 60mg 16mg 0.39mg	
Vitamins	Fat soluble (A, D, E & K) dependent on maternal diet Water soluble (C, B, Thiamine, Niacin, Riboflavin & Folic Acid)	Vit. K highest in colostrum			

NB Breastmilk PH – 6.7 to 7.4, Specific Gravity – 1031, Secretion begins from 16 weeks gestation

1. Lawrence, RA & Lawrence, R.M., Breastfeeding, A Guide for the Medical Profession (7th Ed), 2011, Elsevier Mosby co, St Louis.
2. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013) . Jones and Bartlett. Chapter 21, Smith LJ,

3. Riordon J & Wambach K, Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA.

Immunological Properties Of Breastmilk

COMPONENT	FUNCTION	ORGANISM
CELLULAR		
• Macrophages	Phagocytosis and bacteriostatic Contain sIgA 90% of cells in mature milk Make & facilitate lactoferrin	Candida
• Lymphocytes	T cells short term immunisation B cells act with IgA, IgM, IgG	NEC, meningitis, TB CMV, Rubella, Mumps
• Neutrophils	Phagocytosis, short lived	
• Leukocytes	Protects the breast from infection Passive immunity	
• Monocytes	Long lived cells that prepare bacteria for lymphocyte action	
• Granulocytes	Unknown	
• Epithelial cells		
HUMORAL		
• Secretory IgA (sIgA)	Found in Amino Acid component, lines the gut from mouth to anus preventing bacterial attachment, Colostrum – 0.364g/100ml Fullterm – 0.142g/100ml	Polio, Coxsackie, E-coli, Cholera, Salmonella
• IgM and IgG	High levels in colostrum	RSV, Rubella
• IgE and IgD	Local mammary production	
GUT FLORA		
• Bifidus Factor (Combination of several Oligosaccharides)	Predominant non-virulent flora which creates low pH inhibiting organism invasion	Shigella, E-coli, Salmonella
OTHERS		
• Resistance factor	Antistaphlococcal	Staphlococcals
• Lysozymes (found in protein component)	Increases with duration of breastfeeding, epidermal growth factor, inhibits bacterial invasion by aiding digestion of pathogens	Gram positive entero bacteria
• Lactoferrin (found in protein component)	Binds iron required for bacterial growth, transports iron, high levels in colostrum the declines over next 5 months	Staphaureus, E-coli, Candida
• Interferon	Antiviral activity	Viruses
• Complement 3	Antiviral activity	Viruses
• B12 Binding Protein	Phagocytosis, Renders B12 unavailable for bacterial growth	E-coli, Bacteroides
• Gangliosides		E-coli, cholera
• Lactoperoxidase	Creates frothing in the gut by hydrogen peroxide to kill bacteria	Streptococci, E-coli, Salmonella
• Interleukin 10		
• Epidermal Growth Factor	Promote gut maturation with stimulation of epithelial cell growth	

1. Lawrence, RA & Lawrence, R.M., Breastfeeding, A Guide for the Medical Profession (7th Ed), 2011, Elsevier Mosby co, St Louis.
2. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett.
3. Riordan, J. & Wambach, K., Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA
4. Hale, T., Hartman, P. Textbook of Human Lactation 2007 Hale Publishing L.P.

Initiating Breastfeeding

Skin-to-Skin Contact and Baby-Led Attachment for the Term Baby

Babies are born with innate reflexes that allow them to search and attach to the breast i.e. the rooting and sucking reflexes. Encourage mother to support the baby in the search and assist if necessary.

The first hour may be spent with mother and baby looking at one another in a calm and alert state. This is very important for maternal release of oxytocin and should not be interrupted under normal circumstances.

Early skin-to-skin contact involves placing the naked baby prone on the mother's bare chest at birth or soon afterwards (within 5 minutes). This could represent a 'sensitive period' for priming mothers and infants to develop a synchronous, reciprocal, interaction pattern, provided they are together and in intimate contact. Routine separation shortly after hospital birth e.g. to weigh the baby, is a uniquely western cultural phenomenon that may be associated with harmful effects including discouragement of successful breastfeeding.

A recent Cochrane review discovered that babies that are given early skin-to-skin contact and are kept with their mothers from birth are breastfed for longer. They learn to suckle at the breast when their instincts are switched on in that first hour following birth.

Skin-to-Skin Contact and the First Feed

1. Ensure mother is in a comfortable position. If she requires perineal suturing or has had a caesarean section, ensure that she is well supported with pillows and remains comfortable throughout.
2. Ensure there is someone i.e. partner, family/relative or friend seated next to the mother while having skin-to-skin for safety precaution especially when the mother had any narcotics in the last 4 hours.
3. Ensure the positioning of the baby enables a patent airway by having the face of the baby always visible and baby's chin should be off their chest.
4. The baby may rest vertically on mother's chest between mother's breasts, before he/she displays signs of awakening stage, opening eyes, moving the head and mouthing.
5. The baby will begin an active stage - looking at mother and breasts salivating and rooting, hand to mouth movements, hand to nipple, crawling and bobbing his/her head around mothers chest.
6. The baby will then arch his/her back and lean down towards the breast. During this time encourage the mother to recognise her baby's feeding cues and respond.
7. Encourage the mother to support the baby behind the shoulder blades and allow baby to move his head freely around breast. It may be necessary to assist the baby so that his chin and lower lip are directed towards the lower segment of the areola. The baby's head should be automatically extended when going to the breast.
8. Baby starts to initiate rooting reflex and suck reflex:
   - Turns head towards breast and opens mouth with flanged lips.
   - The tongue will drop and curl and the tip of the tongue anchors behind the gum.
   - The baby's gag reflex is inhibited to allow the baby to accept the nipple
   - He draws it into his mouth to brush across the junction between the hard and soft palate, initiating the suck reflex.

1. Anderson GC, Moore ER, Hepworth J, Bergman N. Early skin-to-skin contact for mothers and their healthy newborn infants. *The Cochrane Database of Systematic Reviews 2003*, Issue 2. Art. No.: CD003519. DOI: 10.1002/14651858.CD003519.
2. Widström A.M., Lilja, G., Aaltomaa-Michalias, P., Dahllö, A., Lintula, M., Nissen, E., *Newborn behaviour to locate the breast when skin-to-skin: a possible method for enabling early self-regulation* 2010. Acta Pædiatrica DOI:10.1111/j.1651-2227.2010.01983.x

Ongoing Positioning & Attachment Facilitation

If baby is having difficulty with latching, start by facilitating skin-to-skin (see previous page).

1. Since all mothers' bodies are different there is not one posture that will fit all. Adopting a comfortable position where she has good back and neck support as well as support for her arms and legs will assist her to relax and be able to sustain the position for long periods of time. She may need a foot stool if sitting in a chair.
2. The position that is most comfortable is often semi-reclined or leaning back a little so her body takes some of her baby's weight and the baby does not display anti-gravity reflexes.
3. Encourage mother to follow the baby's lead with her baby unwrapped to allow her baby to get much closer to her breast and body and use his/her hands. It may also avoid overheating.
4. Encourage the mother to lay the baby prone/facing her with his/her face near the breasts and allow the baby to begin searching for her nipple.
5. If necessary suggest the mother supports her baby behind the shoulder blades with his/her body in close contact with the rest of her torso. The baby may be wrapped around her body and his/her chest touching her breast.
6. The mother may need to bring the baby lower than the breast with his/her lower arm brought around under the breast and allow the weight of his head to tilt back, presenting his chin first.
7. A wide gape can be encouraged by allowing baby to feel the underside of the nipple with his bottom lip.
8. The mother may need to shape her breast to enable the baby to be directed to the underside of the nipple. When baby gapes widely, he/she should be brought quickly to the breast with the nipple aimed towards the roof of his mouth and his chin kept well tucked into the breast. This will enable the underside of the nipple to fold past the top lip. His head will remain slightly extended and the breast should be kept still during this process.
9. After an initial short burst of sucking (Non-Nutritive Sucking), the rhythm will be slow and even with deep jaw movements (Nutritive Sucking). This should not cause the mother any discomfort. Pauses are a normal part of the feed and these become more frequent as the feed progresses.
10. When the mother feels comfortable with this process she can bring her other arm around to cradle her baby in a more natural position. The baby often adopts an oblique lie across the mother's body.
11. Baby should finish the feed of his own accord by coming off the breast spontaneously. The nipple will appear slightly elongated but there should be no evidence of nipple trauma or compression.

NB. If the baby is unable to latch please refer to "Sucking Problems"

1. Colson, S. *Maternal Feeding positions: Have we got it right?* 2005 The Practising Midwife vol 8.,no11
2. Colson, S. *What happens to breastfeeding when mothers lie back? Clinical Applications of biological nurturing.* 2010. *Clinical Lactation Journal of US Lactation Consultation Association*
3. Watson- Genna, C. *Supporting Sucking Skills in Breastfed Infants* 2012 Jones & Bartlett
4. ICLA Core Curriculum for Lactation Consultants 3rd edition 2013 Jones & Bartlett

Occupational Health and Safety

Breastfeeding Procedures to Assist in Reducing Manual Handling Injuries

Goal: The midwife or health worker will assist the mother with breastfeeding and;

a) observe for correct positioning and attachment;
b) position herself so that her/his spine remains in alignment;
c) sustain no manual handling injury during the procedure.

Assisting the mother to breastfeed when she is sitting in the chair

When called to assist the mother with breastfeeding, check the type of assistance she requires e.g. how much the mother herself is able to manage with feeding.

- Make the mother comfortable with good support e.g. a pillow or footstool
- Check the mother is sitting as upright as possible
- Sit on the breastfeeding stool, if available.
- **Adjust** the breastfeeding stool so that it is slightly higher than the seat of the mother's chair
- Assess the mother's ability to latch the baby
- Explain the physiology as required

Mother requiring verbal support only

If the mother requires only **verbal** assistance,

- The midwife or health worker is to observe the baby feeding and
- Sit on the breastfeeding stool in an erect position while observing so that the shoulders and hips are in line

Mother requiring hands on physical support with attachment

If the mother requires physical support to attach baby, whilst mother sits on chair:

- Sit on the breastfeeding stool in an erect position and bring it as close as possible to the mother.
- Adjust the height of the stool according to:
  a) the maternal needs e.g. maternal height, level of breasts
  b) the midwife or health worker's needs e.g. height

The midwife is to sit in an erect position on the stool so that shoulders and hips are in a line.

For the ***cradle position for feeding***, have the breastfeeding stool as close as possible to the mother so that the midwife sits at a ***90-degree angle to the mother's shoulder***. This may mean the nurses will need to spread their knees wide to accommodate the mother's knees or arm of the chair to avoid the need to lean forward excessively and to avoid twisting of the spine.

If the mother requires physical support to attach baby while she remains in bed.

- Adjust the height of the bed so that it is at hip height and the midwife is not bending down to assist.

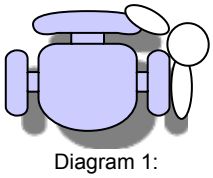


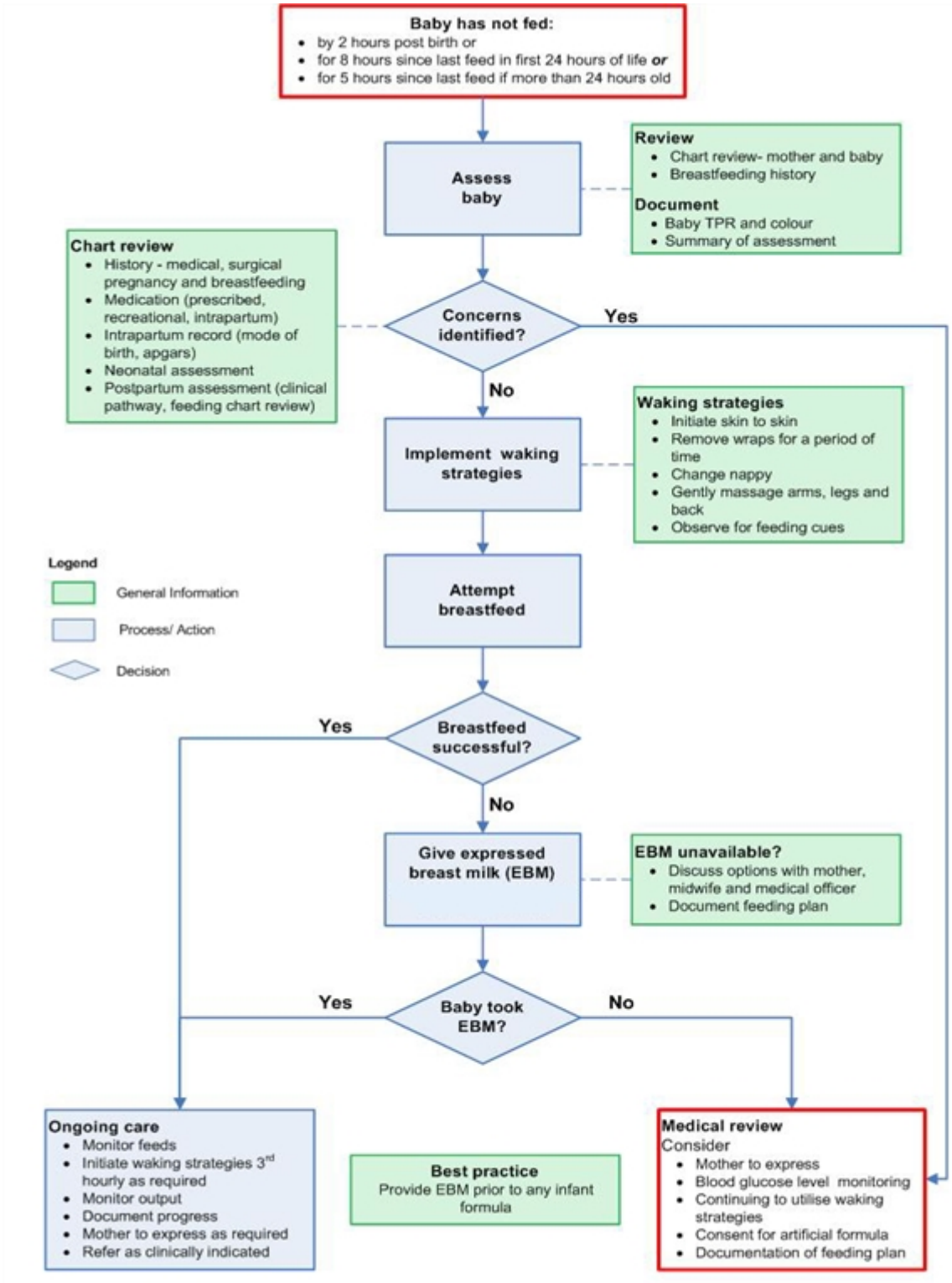
Diagram 1: Shows location of midwife position and spread of knees in relation to mother's shoulders & chair

Assist the mother as necessary ***but*** when physical assistance is required the midwife or health worker should only maintain the selected posture for ***a maximum of 3 minutes only. Stretches are to be performed after 3 minutes and then the selected posture may be re-adopted.*** At no time is the midwife or health worker to twist her spine. Shoulders and hips are to be kept in line. Once the baby is successfully feeding, the midwife is to stand up straight, put her hands behind her hips, place feet well apart and bend backwards 2-3 times.

Outcomes: The midwife or health worker assisted and observed for correct positioning and attachment, her/his spine remained in alignment and he/she sustained no manual handling injury.

Compiled by: Doreen Pawley (OH&S, TCH, 2009) Amended by C. Kelly CMC Lactation RPA Women and Babies 2014
Reviewed by Jacqueline Myers, RPAH Work Health and Safety Women, Babies and Children Workgroup (2014)

Sleepy Baby Breastfeeding Flow Chart



Queensland Maternity and Neonatal Clinical Guidelines: Breastfeeding initiation Guideline No: MN10.19-V2-R15

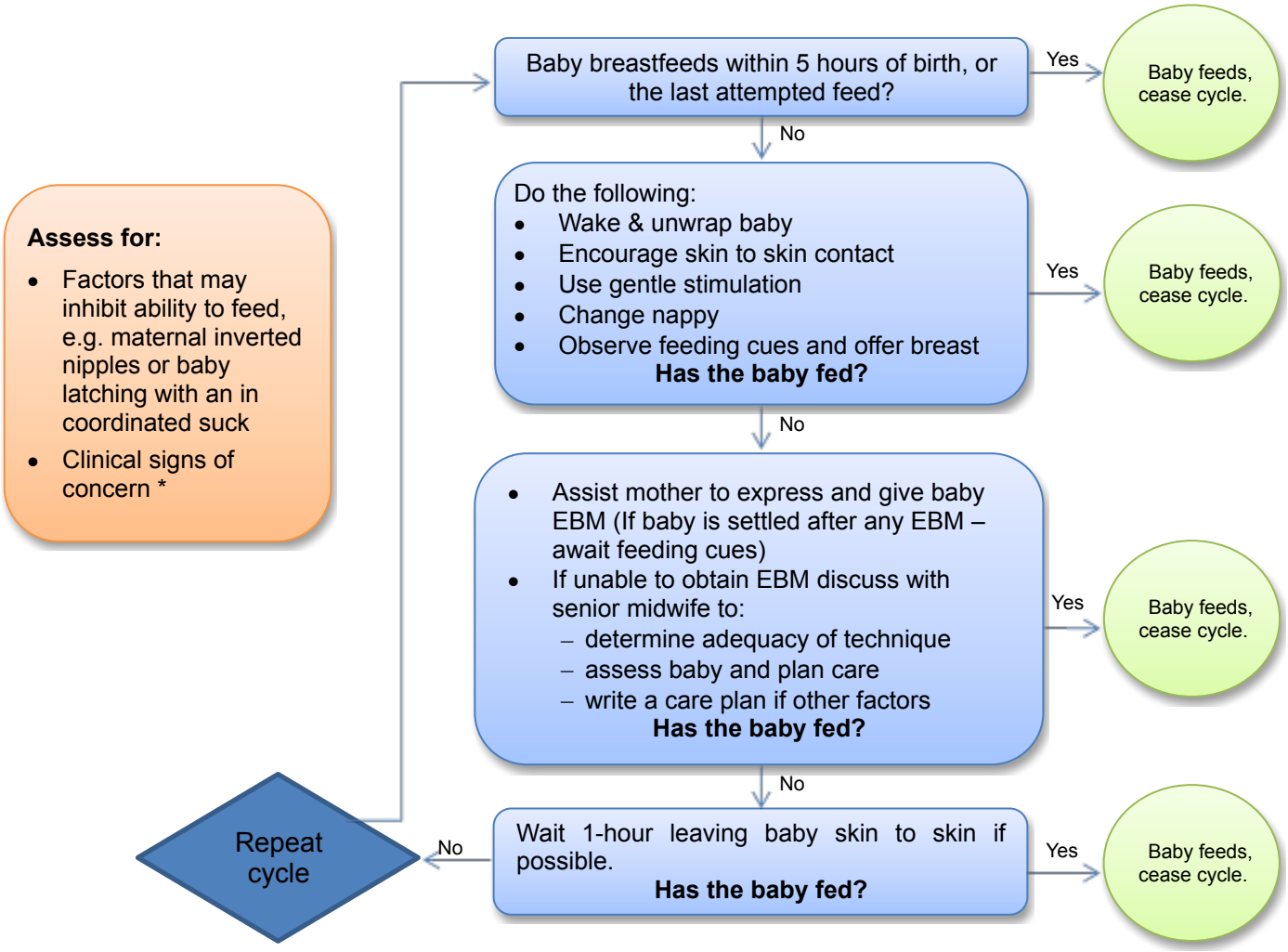
Breastfeeding for the Normal Healthy Full-term Infant in the first 48 hrs

1. The baby has an effective, nutritive feed (code 5 or 6) within 1-2 hours of birth. If not, follow flowchart below.
2. Parents are educated to respond to baby's early feeding cues e.g. baby mouthing, sucking, licking. Crying is often a late cue.
3. Educate parents that frequent feeding with early feeding cues are normal and will help stimulate milk production.
4. It is normal to have 8 feeds or more in 24 hours. However, if following feeding cues, a minimum of three feeds in the first 24hours is acceptable, increasing to a minimum of 6 feeds in the 2nd 24 hours.
5. After the first breastfeed if there are no feeding cues, it is acceptable that the baby may sleep up to 8 hours.

If baby does not attach and feed nutritively within 1-2 hours of birth, reassure parents, assist mother to hand express and give EBM to baby.

Follow flowchart below.

N.B Baby must have been assessed and found to be healthy.



*If any clinical concerns staff may need to refer to other relevant policies
**Offering a complementary feed without indication may negatively impact on the breastfeeding outcome. Few babies require complementary feeds if managed correctly.

Adapted from J. Glover, Supplementation of breastfeeding newborns: a flowchart for decision making. J Hum Lact 11: 127-131, 1995

Sucking Code for Breastfed Neonates

1. Offered but does not attach
   - Deeply asleep, drowsy, could not be roused
   - Search reflex poor or not at all

2. Interested but does not attach
   - Rooting, mouthing, sucking fists, crying

3. Attaches on and off
   - Rooting effectively with or without coaxing
   - Attaches, but does not sustain

4. Attaches but has an inco-ordinated suck.
   - Chomping at the breast
   - Audible clicking whilst sucking
   - Dimpling of the cheeks

5. Good nutritive sucking, short feed.
   - Long, slow, continuous nutritive sucking in response to the release (let-down) of milk into the baby's mouth. Swallowing is observed.
   - Feeding takes less than 15 minutes.

6. Good nutritive sucking, long feed.
   - Long, slow, continuous nutritive sucking in response to the release (let-down) of milk into the baby's mouth. Swallowing is observed.
   - Feeding takes more than 15 minutes

A= Assisted
O=Observed
U= Unobserved

1. Lantry M, Smith A, Worgan R, 1990, Sucking Code (unpublished work)
2. Harris H, 1999, Minor Thesis for Masters Midwifery (unpublished work)

LATCH Assessment Tool

LATCH Breastfeeding assessment tool					
Score	**L**	**A**	**T**	**C**	**H**
	Latch	**Audible swallowing**	**Type of nipple**	**Comfort (breast/nipple)**	**Hold**
0	Too sleepy or reluctant No sustained latch or suck achieved	None	Inverted	Engorged breast, Cracked, bleeding, large blisters or bruises Severe discomfort	Full assist (staff hold baby at breast)
1	Repeated attempts for sustained latch or suck Hold nipple in mouth Stimulate to suck	A few with stimulation	Flat	Flattening Reddened/small blisters or bruises Mild/moderate discomfort	Minimal assist (i.e. elevate head of bed, place pillows for support) Teach one side; mother does other Staff holds and then mother takes over
2	Grasps breast Tongue down Lips flanged Rhythmical sucking Sustained latch	Spontaneous and intermittent < 24 hours old Spontaneous and frequent > 24 hours old	Everted (after stimulation)	Soft Non-tender	No assist from staff Mother able to position and hold baby

Add the score obtained from each row in LATCH. If baby scores less than 7 for a feed, this is an indicator for further evaluation and/or development of a breastfeeding management plan.

1. Jenson D, Wallace S, Kelsay P. LATCH: A Breastfeeding charting system and documentation tool. JOGNN. 1994; 23 (1): 27-32.
2. Queensland and Neonatal Clinical Guidelines Program (2010) Breastfeeding Initiation. Queensland Health. Appendix E

Expressing Breastmilk

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother wishes to **initiate** lactation but is unable to put baby to the breast successfully e.g. baby in nursery, sleepy baby, uncoordinated suck, inverted nipples	• Fully discuss the current situation with the mother and the need for expressing	• Mother will be more relaxed and accepting of procedure	Mother is comfortable with procedure. Sufficient milk is obtained to satisfy baby's needs
	• Encourage early initiation of hand expressing within 6 hrs of birth and continue approx 7-8 times daily or if baby is with mother – each time baby has attempted a feed	• During the colostrum phase hand expressing is the most effective method. It also encourages the mother to be comfortable touching her own breasts.	
	• Use the "Step by Step" expressing guide (appendix ii) and after being shown, encourage mother to take responsibility for her own expressing.	• Mother does not have to rely on the availability of staff and can express in her own time	
	• If expressing continues beyond 24 hours the electric pump may be introduced	• Generally more effective and less time consuming	
	• Mother should be educated on use of both hand expressing and pumps.	• Mother should know how to hand express in an emergency	
Mother wishes to **maintain** lactation but is unable to put baby to the breast at some or all feeds e.g. mother working, mother being discharged from care still expressing.	• Discuss pump options with the mother e.g. electric, battery or hand • Give contact telephone numbers for hire or purchase in her own area • Encourage mother to express at the time baby would normally feed • Try to get one feed ahead • Discuss appropriate breast pumps available to her. Refer to handouts in this document • Double pumping could be encouraged	• Mother should be able to make an informed decision according to efficiency, availability and cost.	Mother is happy with chosen method of expressing Mother expresses easily when away from baby

1. Zimaman N.J et al, 1992, *Acute Prolactin and Oxytocin responses and Milk Yield to Infant Sucking and artifical methods of Expression in Lactating Women*, Paediatrics Vol, 89 No.3 March

Caesarean Section and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Post operative breastfeeding difficulties due to pain, anxiety and lack of mobility	• Initiate skin-to-skin contact as soon as possible • Educate mother re appropriate analgesia • Discuss/educate mother re various breastfeeding positions to alleviate incision pain. • Encourage mother to ask for assistance with feeding	• Maintain comfort of mother and baby during breastfeeds and encourage an efficient let-down reflex	Pain free relaxed mother Positive breastfeeding experience
Mother requiring extra and ongoing physical and emotional support	• Facilitate and plan with practical methods of help and support in partnership with the family	• To have a well rested mother to promote physical and emotional recovery	More confident mother
Unfulfilled expectations e.g. disappointment re birthing experience (leading to conflicting feelings re mothering)	• Reassurance and debriefing • Empower mother so that breastfeeding meets her expectations and goals • Refer to appropriate services eg counselling, lactation specialist if needed	• To promote emotional wellbeing and support breastfeeding	Empowered mother, father and baby
After effects of anaesthetics/analgesics e.g. sleepy baby	• Discuss/give information so that mother can identify babies feeding cues • Give adequate education re: supply/demand minimum feeds 8 / 24 hrs from day 3	• Mother will be able to maximise feeding opportunities to ensure baby has adequate nourishment	Well hydrated baby
Delayed Lactogenisis II	• Reassure mother that the milk will take longer to “come in”, but this is normal after a caesarean and the baby may require feeding more frequently.	• Mother acknowledges that this is a normal physiological process	Milk supply continues to increase.

1. Australian Breastfeeding Association, Booklet Series, 2011 – *Breastfeeding after a Caesarean Birth*
2. Renfrew M et al. *Breastfeeding: Getting Breastfeeding Right for You*, 2000, Celestial Arts California p32
3. Evans KC et al. *Effect of caesarean section on breastmilk transfer to the normal term infant over the first week of life*, Arch Dis Child Fetal neonatal Ed 2003; 88:F380-382.
4. Riordan J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA

Monitoring Baby's Progress- First Week

Age	Volume of breastmilk/day	Feeds/day	Urine/day	Number of stools	Stool Colour	Stool Consistency	Baby Weight
Day 1 First 24 hours	0-5mL colostrum at first feed 7-123mL of colostrum	3-8	1 concentrated may contain urates		black	tarry/sticky	
Day 2 24-48 hours	Increasing volumes	5-10	2-3 concentrated may contain urates	1-2	greenish/black	softening	
Day 3 48-72 hours	Increasing volumes	5-10	3-4 paler, but may be concentrated may contain urates	3-4	greenish/yellow	soft	less than 10% loss
Day 4 72-96 hours	395-800mL	5-10	4-6 pale no urates	4 large or 10 small	yellow/seedy	soft/liquid	between day 4-6 begins to gain weight
Day 5 96-120 hours	200-900mL	8-12	>6 pale urine	4 large or 10 small	yellow/seedy	soft/liquid	

- By 2 weeks of age most babes will have returned to birth weight
- Average weekly weight gain of 150-200grams to 3 months of age
- Babies usually double their birth weight by 6 months of age and triple their birth weight by 12 months of age
- Weight gain or loss is only one aspect of baby well being to consider, every mother and baby should be assessed on an individual basis

NB: The hospital does not supply Pacifiers in the post-natal ward. Early use bottles and pacifiers(Pacifiers, soothers) especially during the establishment of breastfeeding, is believed to interfere with natural processes of breastfeeding, reducing the infant's sucking capacity and stimulation of the mother's breasts. The likely result is delayed or poor establishment of lactation

1. National Health and Medical Research Council (2012) *Infant Feeding Guidelines*. Canberra: National Health and Medical Research Council, 2012. pp34-36
2. Queensland and Neonatal Clinical Guidelines Program (2010) Breastfeeding Initiation. Queensland Health. Appendix D
3. Kent J. How breastfeeding works. Journal of Midwifery & Womens Health. 2007; 52:564-570.
4. Shargo L, Reifsnider E, Insel K. The neonatal bowel output study: indicators of adequate breastmilk intake in neonates. Paediatric Nursing. 2006; May-June 32(3):195-201
5. Nommsen-Rivers L, Heinig M, Cohen R, Dewey K. Newborn wet and soiled diaper counts and timing of onset of lactation as indicators of breastfeeding inadequacy. J Hum Lact. 2008; 24(1):27-33.

Baby behavioural states and feeding cues

Baby behavioural state	Feeding cues	Ready to feed?
Deep sleep • limp extremities, no body movement • placid face • quiet breathing • cannot be easily aroused	**Nil**	No
Light sleep • resistance in extremities when moved • mouthing or sucking motions • facial grimaces • more easily awakened, more likely to remain awake if disturbed • if left undisturbed, will easily fall back to sleep	**Nil**	No
Drowsy • eyes open and close intermittently • might make sounds • might yawn and stretch	**Early** • wiggling, moving arms or legs • rooting, fingers to mouth, licking movements • stirring, mouth opening, turning head – seeking/rooting	Yes
Quiet alert • looks around; interacts with environment • body still and watchful • breathing even and regular	**Early** • wiggling, moving arms or legs • rooting, fingers to mouth, licking movements • stirring, mouth opening, turning head – seeking/rooting	Yes
Active alert • moves extremities • wide-eyed, irregular breathing • more sensitive to discomfort (wet nappy or excessive stimulation)	**Mid** • fussing, squeaky noises • restless, crying intermittently • stretching, increased physical movement, hand to mouth	Yes
Crying • agitated, disorganised • needs comforting	**Late** • full cry • aversive screaming pitch • colour turns red	No

1. Riordon J & Wambach K, *Breastfeeding and Human Lactation, 2014*, 5th edition, Jones & Bartlett, USA.
2. Nommsen-Rivers L, Heinig M, Cohen R, Dewey K. Newborn wet and soiled diaper counts and timing of onset of lactation as indicators of breastfeeding inadequacy. J Hum Lact. 2008; 24(1):27-33.
3. Queensland and Neonatal Clinical Guidelines Program (2010) Breastfeeding Initiation. Queensland Health. Appendix C

Flowchart for ALL Babies with >10% Weight Loss on Discharge

Record baby's age in hours next to the weight on the baby's chart

▼

Observe the following and document any adverse findings on the baby's notes:

- Breastfeeding history i.e. has mother breastfed a previous child successfully
- Any medical issues e.g. HDP or PPH
- Breasts for normal growth and breast changes
- Intact nipples
- Positioning, attachment & baby's sucking

Baby's output appropriate for age

▼

If there are any adverse findings, discuss with the Midwife-in-Charge or Lactation Consultant (if available) regarding plan i.e. tongue tie or poor attachment . Do not automatically start extra expressing and giving complementary feeds if there are no adverse findings.

▼

Advise mother to seek early weight check (either GP or CFHN)

▼

Either refer directly to CFHN or leave a message for the Discharge Liaison Nurse (if available)

▼

Document the referral in the "Follow up Appointments" on Neonatal Discharge Summary. Also comment in the discharge report in the case history notes

1. National Health and Medical Research Council (2012) Infant Feeding Guidelines. Canberra: National Health and Medical Research Council

Complementary Feeds for Breastfed Babies

There is no place for routine use of complementary feeds in a healthy term newborn

In assessment the wellbeing of a newborn it is important to look at the full picture.

Baby's age, colour, feeding patterns, change in stools, behaviour and level of hydration. If the baby is not feeding, EBM should be given to the baby. Discourage dummy use until milk supply is well established, approximately 6 weeks.

The unnecessary use of infant formula will decrease the baby's need to breastfeed, delay initiation of a full milk supply and increase the risk of maternal engorgement. It will also alter the flora of a baby's gut making it more susceptible to bacterial invasion for two to four weeks. The mother is undermined with her ability to breastfeed and becomes very focused on control and "measured amounts". The baby expects an instant reward when initiating sucking and a very full stomach on completion of the feed.

Exclusive breastfeeding is the norm. In a small number of situations there may be a medical indication for supplementing breastmilk or for not using breastmilk at all. It is useful to distinguish between:

Acceptable Medical Reasons for Complementary Feeding.

- Infants who cannot be fed at the breast but for whom breastmilk remains the food of choice e.g. premature babies.
- Infants who may need other nutrition in addition to breastmilk e.g. hypoglycaemia
- Infants who should not receive breastmilk, or any other milk, including the usual breastmilk substitutes and need a specialised formula e.g. galactocaemia
- Infants for whom breastmilk is not available e.g. unable to provide sufficient EBM
- Maternal conditions that affect breastfeeding e.g. mammary hypoplasia, breast reduction surgery.
- Maternal conditions that may justify the temporary avoidance of breastfeeding e.g. severe illness that prevents a mother caring for her infant.

In families with allergy history and up to 15% of those who have no history, a breastfed baby can be sensitised to a cow's milk protein by giving one complementary feed during the first three days of life.

Suggested intake per feed of a healthy term breastfed baby is outlined below and should be varied to suite the individual baby's needs and/or if the baby is breastfeeding prior to having the complementary feed:

Day 1	Day 2	Day 3	Day 4
5-10mls / feed	5-15mls / feed	15-30mls / feed	30- 60mls / feed

Protocol for breastfed babies whose primary relatives have atopic disease

There is sufficient evidence to suggest that babies whose primary relatives have atopic disease should if possible receive exclusive breastmilk feeds.

If this is not possible because of delayed or inadequate supply while the baby is in hospital, then a partially hydrolysed formula should be used as complementary feed until breastfeeding is fully established.

If the milk supply is not adequate by discharge, the formula should be continued and mother should be encouraged to express 3rd hourly until seen by the referred, appropriate community support person for help with lactation.

1. Steinlein E, Hunter H & Heads J, 2002 (March), Complementary Feeding of Breastfed Babies, Midwifery Matters
2. ABM Clinical Protocol #3: Hospital Guidelines for the Use of Supplementary Feedings in the Healthy Term Breastfed Neonate, revised 2009

3. UNICEF/WHO Acceptable medical reasons for the use of Breastmilk substitutes 2009 World Health Organisation, Department of Nutrition for Health and Development

Droplet Feeding EBM (Temporary Measure Only)

Rationale for procedure

A **HEALTHY TERM BABY** in the first 48 hours of life may have difficulty latching to the breast for the following reasons:

1. Sleepy baby/not interested – can be due to birth, can be related to maternal medication in labour
2. Skin- to- skin has been tried with no success
3. Baby interested, but unable to latch for no obvious reason
4. Mother has flat/inverted nipples

Goals

To aid the initiation of milk supply by early and regular expression

To ensure that baby safely receives all expressed breastmilk available

To lessen the incidence of nipple confusion

Potential Hazard

Aspiration of breastmilk (although research shows that this may not be an irritant to baby's lungs)

Equipment

Clean gloves

Clean container to collect milk - 2ml syringe

Procedure

Observe all preliminary standards appropriate to the procedure eg. Hand washing

Latching at the breast should be attempted for 5-10 minutes at each feed time. If the baby does not latch, the mother assisted by the midwife, should hand express both breasts. The electric pump may be used on a low/medium setting from day 2.

Midwives may droplet feed a small amount (no more than 10mls) of expressed breastmilk (EBM) directly into the front of the baby's mouth with the following precautions:

- The baby must be alert
- Use ONLY a 2ml disposable syringe
- Place the baby in a semi upright position
- Drip EBM slowly into the front of the baby's mouth and observe for swallowing
- Do not encourage the baby to suck on the syringe

Outcome

Milk supply was initiated by early and regular expression

The baby safely received all expressed breastmilk available

The incidence of nipple confusion was reduced

1. Steinlein E, Hunter H & Heads J, 2002 (March), Complementary Feeding of Breastfed Babies, Midwifery Matters
2. Lawrence, RA & RM, Breastfeeding, *A Guide for the Medical Profession*, 2005, Mosby Co, St Louis. P 516

Cup Feeding EBM (Temporary Measure Only)

Rationale for procedure

A **HEALTHY TERM BABY** may have difficulty latching to the breast for the following reasons:

1. Skin-to-skin contact has been tried without success
2. Baby is alert and interested, but unable to latch
3. Baby requires nutritive fluids in addition to breastfeeding
4. Cup feeding has been shown to be safe and may help preserve breastfeeding duration in situations where multiple supplemental feedings are required
5. Step 9 of "The Ten Steps to Successful Breastfeeding" implementation standards require that when a woman is unable to breastfeed the use of a teat should be avoided

Contradictions: Spoon and cup feeding is contraindicated in babies with marked neurological defects.

Goals

To aid the initiation of milk supply by early and regular expression

To provide additional nutritive fluids to the breastfed baby utilising a method that supports Baby Friendly Health Initiative implementation standards

To provide an alternative feeding method to newborns when unable to directly breastfeed

Potential Hazard

Aspiration of breastmilk /breastmilk substitute (Note: Research shows that breastmilk may not be an irritant to baby's lungs)

Equipment

Clean container to collect milk - 30ml plastic measuring cup

Clean gloves

Expressed breastmilk

Infant formula (if required)

Procedure

Observe all preliminary standards appropriate to the procedure e.g. Hand washing

Latching at the breast should be attempted for 5-10 minutes at each feed time. If the baby does not latch, the mother assisted by the midwife, should hand express both breasts. The electric pump may be used on a low/medium setting from day 2.

Midwives may cup feed a small amount (no more than 30mls) of expressed breastmilk (EBM) directly into the front of the baby's mouth with the following precautions:

- Each mother and baby's needs should be assessed individually.
- Staff must discuss the objectives of this policy with the parents and obtain their verbal consent.
- Baby must be awake, alert and displaying signs of hunger.
- Wrap baby securely
- Support the baby in an upright position on your lap.
- If possible have the cup at least half full for the beginning of the feed.
- Tip the cup so the milk is just touching the baby's upper lip. It should not be poured into the baby's mouth.
- Rest the cup on the baby's lower lip and allow the baby to sip milk from the rim of the cup.
- Leave the cup in the correct position during the feed. Do not keep removing it when the baby stops drinking.
- Discard the medication cup after use.
- If latching at the breast is not achieved by day 3, a bottle and teat should be commenced to feed baby.

Outcome

Milk supply was initiated by early and regular expression

The baby safely received all expressed breastmilk available

The incidence of nipple confusion was reduced

1. Nyqvist K, Strandell, E, 1999, A Cup Feeding Protocol for Neonates: Evaluation of nurses' and parents' use of two cups. JNN Vol 5 (2): 31-36.
2. Australian Breastfeeding Association Fact Sheet: Cup Feeding https://www.breastfeeding.asn.au/bfinfo/cup-feeding
2. Howard et al. Randomised Clinical Trial of Pacifier Use and Bottle-feeding or Cup feeding and their Effect on Breastfeeding. Paediatrics 2003; 111(3):511-518.

Management of Problems

Painful Nipples

Needs and/or Problems	Action	Rationale	Desired Outcome
Painful nipples No obvious damage	• Ensure correct positioning and attachment	• A well attached baby is unlikely to cause nipple damage	Easy attachment and pain free breastfeeding. Healthy nipples and mother proficient at attaching baby herself
	• Reassure mother that her nipples will not be damaged if her baby attaches well. Some nipple tenderness may be experienced in first days post partum.	• Hormonal changes may cause tenderness	
	• Encourage to detach or reattach if pain persists into feed • Encourage to seek further assistance if pain increases	• If pain persists nipple damage will increase	
Damaged nipples Grazes, fissures or bleeding	• Attain history and examine nipples • Observe breastfeed and ensure optimal attachment • If breasts are full, may need to hand express to soften the areola prior to latching	• Enables easier attachment	Mother is able to latch and feed the baby comfortably

Painful Nipples cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
Pain persists	If pain persists discuss the following options: • Continuing to feed- meticulous hygiene (i.e. if using breast pads, change regularly)	• Mother is able to make an informed choice	
	• Resting and expressing for up to 48 hours (1 or 2 feeds may be all that is necessary) then assist with feed. Alleviate the underlying cause of nipple damage by improved latching technique	• To prevent further trauma which may lead to early weaning	
	• Offer symptomatic relief if required e.g. paracetamol and apply breastmilk post feed • Alternate position depending on area of damage e.g. Madonna, twin fashion	• To relieve the pain so that mother can tolerate attempting to attach baby correctly and to prevent further damage and make attachment more comfortable	
	• If pain experienced detach and reattach	• To assist restoration of skin integrity and protect against infection	
	• Ointment and creams should not be applied	• There is no evidence to support the use of ointments, sprays or creams to prevent or treat nipple soreness	
	• Avoid soap on nipples	• Washes away normal secretions and may have a drying effect	
	• Use of nipple shields until the nipple gets better is often the treatment of last resort	• After discussing proper positioning and attachment with the mother nipple shield can be used as an intervention that prevents a mother from weaning	A healed graze No further trauma A positive breastfeeding relationship

Painful Nipples cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
Other causes Nipple Vasospasm Nipple Whitespot Thrush Baby tongue tie Baby has an inco-ordinate suck Breast fullness engorgement	Please refer to relevant section in this document for information on these conditions		

1. Royal College of Midwives, *Successful Breastfeeding*, 2002, 3rd Edition, Churchill Livingstone, p 101.
2. Lawrence RA & RM, *Breastfeeding, A Guide for the Medical Profession* , 2011 7th edition Mosby Missouri. P249-252.
3. Riordan J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA
4. Brodribb W, *Breastfeeding Management in Australia*, 2012, 4th edition, Australian Breastfeeding Association, Australia, p 366-367.
5. Australian Breastfeeding Association Fact Sheet Sore/Cracked Nipples https://www.breastfeeding.asn.au/bf-info/common-concerns%E2%80%93mum/sore-cracked-nipples (accessed 06/06/14)

Breast Fullness/Engorgement

Needs and/or Problems	Action	Rationale	Desired Outcome
Normal fullness Breasts full, heavy, slightly tender, leak freely	• Counsel mother that this is normal physiology of establishing lactation	• There is an increase in blood supply and lymph in the breast tissue that subsides with an increase in milk production	Baby correctly attached to breast and satisfied post feed Breast is soft and comfortable
	• Keep breasts well supported eg. advise mother to wear a well fitting nursing bra (not constricting)	• Will support the heaviness and reduce pain and oedema	
	• Remove bra while feeding and allow 2nd breast to leak	• To maintain drainage and prevent back pressure in ducts, which would depress milk production	
	• Assist mother with gentle hand expression prior to latching baby	• Will soften areola and produce a small amount of flow	
	• Ensure correct position and attachment aiming baby's chin towards fullest area	• Placing baby's bottom jaw adjacent to fullest area will encourage emptying of that area	
	• Ensure first breast is soft and comfortable before offering second breast	• This should avoid a blocked duct which may lead to mastitis	
Engorgement (rare) Breasts hard, red, shiny, painful and milk does not flow	• Apply and reapply cold packs if mother is agreeable and reassess in 2 hours	• Will reduce vascularity and oedema and encourage milk flow	Breast is soft and comfortable post feed Mother comfortable, pain free and able to successfully breastfeed baby
	• Handle breasts as little as possible during this time	• Unnecessary stimulation may increase supply further	
	• Offer regular paracetamol or anti-inflammatory medication	• Vascularity and oedema should be reduced	
	• Attempt to breastfeed/hand express	• Will relieve pain and alleviate any elevation in temperature	
	• If using a breast pump, ensure the pressure is low	• May draw more oedema into the areola area and hinder breast draining	

Breast Fullness/Engorgement cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
Unable to attach and feed or express milk by hand or pump due to true engorgement	• Prior to attaching baby to breast or expressing, press inward toward the chest wall with fingers evenly around the areola and hold for about a minute (known as reverse pressure softening) **	• Theorised that the areola is softer so the baby can attach better and remove milk from the breast	Baby feeds and milk is removed and engorgement improves Reduces the engorgement so that the infant can feed effectively

***NB - Heat is not recommended in the first 10 days as it tends to increase venous engorgement, however may be used to assist with initial milk flow after this time.**
- Reverse Pressure Softening/ Gentle Positive Pressure- has been identified in the literature but is not based on scientific evidence.

1. Riordan J & Wambach K, Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA
2. International Lactation Consultants Association, Evidence Based Guidelines for Breastfeeding Action during the First Fourteen Days, 1999, p18.
3. Lawrence RA & RM, Breastfeeding, A Guide for the Medical Profession, 2011 7th edition Mosby Missouri. P249-252.
4. Brodribb, W , Breastfeeding Management in Australia, 2012, 4th edition, Australian Breastfeeding Association, Australia, p 147.
5. National Health and Medical Research Council (2012) Infant Feeding Guidelines. Canberra: National Health and Medical research Council, 2012
6. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013) . Jones and Bartlett p 747-750

Axillary Breast Tissue

Needs and/or Problems	Action	Rationale	Desired Outcome
Breast tissue extending into the axilla which may become swollen, engorgement and painful due to lactogenisis II.	• Encourage mother to raise her arm and gently massage towards the breast if the tissue appears to be connected to the rest of the breast.	• May be separate from the rest of the breast tissue or be connected to the tail of Spence	Mother is reassured, emotionally supported- mother and baby continue to breastfeed. Any mastitis is diagnosed and treated.
	• Do not try to massage firmly or "squeeze" the milk out	• Vigorous massage will increase the risk of mastitis and cause pain	
	• Apply ice compress for comfort and administer pain relief such as paracetamol	• To decrease discomfort and oedema	
	• Observe for signs milk pooling and mastitis and treat with appropriate antibiotics if necessary	• To avoid mastitis and treat early	
	• Reassure mother the engorgement and milk will reabsorb and settle with time	• Mother to be reassured	

1. Riordan J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA
2. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett p 747-750

Use of Nipple Shields

Needs and/or Problems	Action	Rationale	Desired Outcome
Nipple shield should be tried if baby is **unable to latch** and feed effectively due to: • Breast refusal • Inco-ordinate suck • Inverted/flat nipples • Extreme nipple pain (used as a last resort in preference to mother weaning)	• Nipple shields should only be used once milk is "in" (usually day 3 onwards) and as a short term measure only • Discuss information in nipple shield handout and give mother a copy	• Short term use may preserve the breastfeeding relationship as it keeps baby at the breast and avoids the need for expressing	Baby is able to breastfeed successfully with nipple shield
Reduced milk transfer	Problems can be reduced by the following: • Use of a suitable silicone shield • Being shown how to use the shield correctly • Assessing baby's ability to latch well with the shield and observing for changes in baby's sucking pattern • Correct cleaning and storing of shield between uses • Ongoing follow-up to try baby directly to the breast. Ideally within 2-3 weeks. • Extra expressing may be necessary if there is evidence of reduced milk supply	• May need large or small shield dependant on nipple size. Please note different size nipple shields are available. • Lack of direct stimulation may lead to a lower milk supply and poor weight gain in the baby • Avoid any nipple damage and ensure adequate breast drainage and lessen the risk of infection • Maintain hygiene practices • Baby may prefer nipple shield and may be difficult to get directly onto breast • To increase milk supply	Length of shield use is minimised Baby is able to latch effectively to the breast without shield

1. International Lactation Consultants Association, Evidence Based Guidelines for Breastfeeding Management during the First Fourteen Days, 1999, p 1.
2. Riordan J & Wambach K, Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA
3. Brodribb, W , *Breastfeeding Management in Australia*, 2012, 4th edition, Australian Breastfeeding Association, Australia, p 367.

Blocked Milk Ducts

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother has a palpable breast lump with well-defined margins. Milk or cast-off cells accumulate within a duct and form a localised blockage or plug. May be caused by: • Poor drainage of the breast • External pressure e.g. finger or bra • A missed feed • Nipple white spot May be accompanied by: tenderness, heat and possible redness	• Encourage continued breastfeeding with good positioning and attachment. • Moist heat prior to feed (if baby >10 days) • Feed on affected breast first	• Should ensure optimal drainage	
	• Encourage to relax to assist the let down reflex to work more efficiently	• Encourages milk flow while baby is sucking.	
	• Aim chin towards area of blockage. • Very gentle massage just behind the affected area during the feed. If not resolved after feeding, manual expression with fingers in alignment with blockage..	• Directly works on affected ducts	Plug is released. May be brown or green in colour & thick & stringy. It is not dangerous to the baby.
	• Discuss diet & rest • Avoid restrictive clothing	• Prevent future blockages	Blockage is cleared, further complications are avoided and breastfeeding continues

***NB Heat is not recommended in the first 10 days as it tends to increase venous engorgement**

1. Victorian Breastfeeding Guidelines, *Promoting Breastfeeding*, 1995, Vic. Gov. Pub, p 35.
2. Lawrence RA & RM, Breastfeeding, A Guide for the Medical Profession, 2005 6th Edition Mosby Co, St Louis, p 563.
3. International Lactation Consultants Association, Evidence Based Guidelines for Breastfeeding Management during the First Fourteen Days, 1999, p 18.
4. Riordan J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA
5. Brodribb, W, *Breastfeeding Management in Australia*, 2012, 4th edition, Australian Breastfeeding Association, Australia, p 165.

Mastitis

Needs and/or Problems	Action	Rationale	Desired Outcome
Symptoms • Fever >38ºC • Flu-like joint aches and pains • Chills or rigors • Red, tender hot area on breast	If there is no nipple damage, encourage continued breastfeeding with good positioning and attachment – refer mother for further input with this if necessary. (it is important that the whole feed is observed). Antibiotics may be required depending on severity of symptoms.	If the milk is not removed at the rate it is being produced, there is a rise in pressure in the alveoli and this forces milk into the surrounding tissue	Symptoms resolve without further treatment
	If nipples are cracked antibiotics should be commenced and breastfeeding or regular expressing continued	When the nipple is cracked, organisms pass through the protective barrier of the skin and infective mastitis is more likely	Noticeable improvement within **48** hours. Redness subsided, breast soft and comfortable post feed or if expressing. No extension of nipple damage
Baby/pump not draining breast adequately Contributing factors include stress, fatigue, poor attachment, cracked nipples, external pressure eg; finger or bra, missed feed	• Moist heat prior to feed (if baby >10 days). • Rotate breasts normally, but ensure that the affected side is well drained. If baby does not go the 2nd breast, mother may need to express for comfort only	• Should promote letdown and aid milk flow	Baby is able to latch and suck well A noticeable improvement after several feeds
	• Aim chin towards area of blockage very gentle massage over affected area during the feed • Paracetamol prn and cold packs	• The area of the breast adjacent to the baby's jaw will always be the best drained area	
	• Discuss nutritious diet, extra fluids and bed rest • Avoid restrictive clothing (appendix v)	• Mother may experience pain	
Requiring Antibiotics (Antibiotic treatment alone without adequate breast drainage will not resolve mastitis.	**Flucloxacillin, Cephalexin** 500mg four times a day for 10-14 days is the current recommendations. Discuss potential side effects. If no improvement in 48 hours- consider admission to hospital for intravenous antibiotics	A broad spectrum antibiotic is needed to work on gram positive organisms	Noticeable improvement within **48** hours. Redness subsided, breast soft and comfortable post feed or if expressing

***NB Heat is not recommended in the first 10 days as it tends to increase venous engorgement**

1. The effectiveness of therapeutic ultrasound in the treatment of mastitis has not been scientifically demonstrated and is not recommended
2. Lawrence RA & RM, Breastfeeding, *A Guide for the Medical Profession*, 2011, 7th Edition Mosby Co, St Louis p 562
3. Hale T, *Medication and Mothers' Milk*, 2014, 16th Edition, Pharmasoft Medical, USA
4. International Lactation Consultants Association, *Evidence Based Guidelines for Breastfeeding Management during the First Fourteen Days*, 1999, p18
5. Riordan J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA
6. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett
7. Brodribb, W, *Breastfeeding Management in Australia*, 2012, 4th edition, Australian Breastfeeding Association, Australia
8. National Health and Medical Research Council (2012) *Infant Feeding Guidelines*. Canberra: National Health and Medical Research Council, 2012.

Lactating Breast Abscess

Needs and/or Problems	Action	Rationale	Desired Outcome
Suspected Breast Abscess i.e. a localised collection of pus encapsulated in the breast tissue. Usually associated with a recent episode of mastitis and a history of inappropriate or delayed treatment	• Commence or recommence appropriate antibiotics	• Arrests the progress of the abscess	Correct diagnosis is made
	• Diagnostic ultrasound • Refer mother to breast surgeon	• To confirm presence of abscess (Differential diagnosis may be a galactocele)	
Confirmed Abscess	• Needle aspiration under ultrasound guidance (usually requires multiple repeats)	• Good option if abscess is small • Can be done on an outpatient basis and does not require a general anaesthetic	Mother is able to make an informed choice about method of management
	• Mother should remain on an appropriate antibiotic cover	• There is an ongoing risk of infection during aspiration procedure	
	• Surgical incision and drainage requires hospitalisation x 1 day and a general anaesthetic	• May be dependent on size of abscess, availability of options at time of presentation and mother's choice	Abscess is drained adequately, infection is prevented and breastfeeding continues Mother and baby are not separated
	• Antibiotics cease once drained then a daily saline wick dressing to allow granulated healing (Appendix x)	• Risk of infection lessens once abscess is drained and slow wound healing avoids formation of milk fistula	
	• Allow milk to leak from wound during feed	• Wound remains sterile	
	• Admission with baby	• Continued breastfeeding is supported	
Mother requires lactation support	• Appropriate referral & assessment of any feeding problems	• Mother will have improved outcome if breastfeeding continues	Wound heals well with no interruption to breastfeeding
Mother thinking of weaning	• Discuss option of weaning from effected breast only i.e. winding down expressing	• Mother is able to feed from unaffected breast	Wound heals well, breastfeeding continues on one breast
Mother elects to fully wean before or during treatment	• Should be prescribed medication for suppression of lactation e.g. Cabergoline (Dostinex®) & no expressing (appendix viii)	• Continued milk secretion without milk removal or medication will increase risk of complications	Wound heals well. Mother weans without complication

1. Lawrence RA & RM, *Breastfeeding: A Guide for the Medical Profession*, 2011, 7th Edition, Mosby & Co, Missouri
2. Lantry M, *Review of Management of Lactational Breast Abscess*, 1998 (unpublished work), International Lactation Consultant Association Conference, Florida USA
3. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett
4. The Academy of Breastfeeding Medicine Protocol Committee, ABM Clinical Protocol #4: Mastitis, 2014

Low Supply of Breastmilk

Needs and/or Problems	Action	Rationale	Desired Outcome
Low supply suspected due to any combination of the following: • Limited nutritive sucking when breastfeed observed • Unsatisfied baby post feed • Minimal wet nappies • Poor weight gain. See *On-going monitoring of progress*	Attain a full history in an attempt to eliminate the following: **Maternal Considerations** • Mother on medication • Mother feeding to schedule (rather than need) • Limiting time at the breast • Unrelieved engorgement • Only offering one breast per feed • Inappropriate formula supplementation • Early introduction of solids • Inadequate diet/fluids • Inadequate rest • Over exercise • Overuse of alcohol • Overuse of caffeine • Overuse nicotine • Polycystic Ovarian Syndrome (PCOS) • Pregnancy • Hormonal Contraception • Breast Hypoplasia	May all impede on mothers ability to produce sufficient milk	
	Baby Considerations • Poor latch • Overuse of dummy • Baby extending periods of sleep overnight Oromotor dysfunction (see Sucking Problems and Oral Anomalies)	Decrease in stimulation to the breast and inadequate removal of milk will decrease supply	

Low Supply of Breastmilk cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
Low supply suspected (continued)	**Other contributing factors to consider:**		Underlying problem is identified
	• Endocrine problems e.g. Diabetes, pituitary adenoma	• Prevents Prolactin levels from rising • Can lead to Sheehan's Syndrome and failure of lactation due to ischemic pituitary necrosis	
	• Breast surgery • Delayed Lactogenesis II	• Damage to breast anatomy • Can be varied due to parity or type of birth	
	• Retained products • Post partum haemorrhage >1500mls • Anaemia	• May cause a 15-20 hour delay in Lactogenesis II • May cause lactogenesis II to not occur at all	
	• Mother/baby separation	• Expressing is not as stimulating as the baby feeding	

1. Lawrence RA & RM, *Breastfeeding, A Guide for the Medical Profession*, 2011, 7th Edition Mosby Co, St Louis
2. Brodribb, W , *Breastfeeding Management in Australia*, 2012, 4th edition, Australian Breastfeeding Association, Australia

Low Supply of Breastmilk cont..

Needs and/or Problems	Action	Rationale	Desired Outcome
Low supply suspected (continued)	• Observation (or refer for) of a breastfeed	• Limited nutritive sucking when baby is latched well is a reliable indicator for low supply	
	• Feed more frequently and encourage finishing the first breast and always offering the second breast	• More frequent and proper feeds will increase stimulation of the breast	
	• Encourage mother to express both breasts for 5-10 minutes after each feed either by hand, manual pump or electric pump. Double pumping could be encouraged	• Will increase stimulation of the breast and any extra EBM may be offered to baby	
	• Encourage skin-to-skin contact	• Increases baby's natural instinct to breastfeed	Underlying problem is identified
Low supply identified, i.e. may be temporary due to growth spurt. Common growth spurt periods are: 10-12 days 3 weeks 6 weeks 3-4 months	• Resume overnight feeding	• More stimulation to breast	
	• Cease unnecessary solids/formula	• Exclusive breastfeeding may increase supply	
	• Ensure mother has a good diet	• A good basic diet is essential while you are breastfeeding	
	• Discuss with mother her ability to get adequate rest	• Fatigue contributes to inadequate milk supply.	A more settled baby who is gaining weight and has an adequate urinary output More relaxed mother with a better milk supply
	• Check that mother has a good support network	• A nursing mother needs support and someone to care for her	
	• Lower caffeine/alcohol/nicotine intake	• Let-down response enhanced	
No improvement in supply with above management	Discuss use of galactagogues with mother Prescription drugs • Domperidone (Motilium®) (appendix iv) These drugs have not been approved by the manufacturer's for this use • Herbal (mother's choice) • Acupuncture (mother's choice) • Consider supply line	Domperidone acts primarily in the periphery with minimal access across blood/brain barrier-now considered drug of choice This will increase stimulation to the breasts while maintaining adequate nutrition for the baby	Should be a noticeable difference 3-5 days into the course

Low Supply of Breastmilk cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
As above with a history of PPH, fatigue, hair loss, continuing amenorrhoea	• Investigate for Sheehan's syndrome (rare)	• Severe PPH may cause infarction of the pituitary gland	Treatment according to confirmed diagnosis
Baby requires complementary feeds	• If complementary feeds are temporarily necessary, consider the use of supply line	• Extra stimulation to the breast will help increase supply and keep baby near breast	Supply increases and complementary feed is kept to a minimum

NB. Medication should not replace breastfeeding management. Each mother should have close follow-up by a clinician. Metoclopramide is no longer the preferred choice as it is associated with causing depression and herbal remedies of unknown composition should be avoided.

1. Li, K. *A Pilot Study to Evaluate the Effect of Acupuncture on Increasing Milk Supply of Lactating Mothers*, 2003. Coursework Master Thesis, Victoria University.
2. Hale T & Rowe, H Medication and Mothers' Milk, 2014, 16th Edition, Pharmasoft Medical, USA,
3. Walker, M. *Breastfeeding Management for the Clinician- Using the Evidence*. 2014. Jones and Bartlet Publishers p 415-417
4. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013) . Jones and Bartlett

Use of a Lactation Aid (Supply Line)

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother is unable to supply sufficient breastmilk for her baby's needs and her baby requires extra nutrition and she would like to use a lactation aid. May be related to: • Maternal issues e.g. breast hypoplasia or surgery or mother may wish to induce lactation or relactate • Baby issues may include weak, disorganised or dysfunctional suck A lactation aid may be either: • Trial use: an infant feeding tube attached to a bottle with formula or 20 mL syringe. Single use only The bottle remains upright and can be tucked into the mother's bra or pocket Mother decides to use at breast supplementation and purchases the manufactured model. It is a vented system with a bottle or breastmilk bags and notched cap that enables pinching off of the tubing as required. It hangs by a cord around the mother's neck.	• An experienced healthcare professional should discuss suitability, available options, benefit and cost in feeding lines with the mother	• A baby using a feeding tube must be able to latch-on and do some form of sucking. • The manufactured model comes at a greater cost	Mother and baby use the lactation aid successfully The amount required is in keeping with the mother's own milk production Baby's feeding needs are met
	• A decision is made about appropriate supplementation e.g. EBM or infant formula and the amount required.	• Creates a behaviour-modification situation that shapes baby's sucking pattern to one suitable for obtaining milk from the breast • Sucking stimulation by the baby lessens the need for extra expressing.	
	• Demonstrate the use of the feeding tube for at breast supplementation • Mother is shown how to use the supply line appropriately	• Gives mother and baby opportunity to trial feeding at breast supplementation before deciding to use the manufactured model	
	• A full feed is observed and assessed • Check baby's weight and progress regularly	• Adjust amount of supplementation according to individual progress	

1. Riordan J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA
2. Newman Jack, 2005, Handout#5, Lactation Aid, www.kellymom.com/newman/05lactation_aid.html

Oversupply of Breastmilk

Needs and/or Problems	Action	Rationale	Desired Outcome
Maternal symptoms: • Breast not draining adequately • Breast remaining hard/lumpy post feed • Mastitis Baby symptoms • Gulping or having difficulty coping with milk flow • Short, frequent feeds • Frequent loose stools • Possiting/vomiting after feeds • Extremely unsettled • Minimal weight loss post birth followed by large weight gains	**If baby under 4 weeks** • May need to express some milk prior to latching baby if breast very full	• Initiation of breastfeeding reliant on endocrine factors as well as milk removal	Breasts drain well and are lump free post feed Settles spontaneously Supply settles
	• Optimise positioning and attachment	• Should ensure good breast drainage	
	• Encourage baby to finish the first breast prior to being offered the second breast	• This management strategy resulted in partial or complete resolution of problems in 79% of babies	
	• Breast Massage, Reverse Pressure Softening and Breast Compression are options to improve drainage of higher fat milk	• Breast massage significantly increases total solids, lipids, casein concentration, and gross energy in breastmilk leaving the baby more sustained between feeds	
	• Aim for minimum three hours from commencement of one feed to the next	• Should help to reduce supply and encourage a longer feed	
	• Gentle handling post feed	• Minimise possetting	
	• Discuss settling techniques with parents and reassure them that supply should settle over a few weeks	Parents are more aware of how to pacify baby	
	If baby over 4 weeks Avoid extra expressing As above plus: • Feed baby in an upright or straddle position	• Breasts more reliant on removal of milk (autocrine control). Extra expressing more likely to increase supply	Symptoms resolving Parents are able to effectively manage situation Baby's symptoms resolve and milk supply settles
	• Do not force feed • If baby detaches when letdown occurs allow milk flow to settle before re-offering	• Baby should manage fast flow a little better	

1. Lawlor-Smith C & Lawlor-Smith L, 1998, *Lactose Intolerance, Breastfeeding Review* Vol 6 No1, 1998, p29-30
2. Woolridge MW & Fisher C, 1988, *Colic Overfeeding and Symptoms of Malabsorption in the Breastfed Baby: A Possible Artefact of Feed Management*, Lancet, Aug13, p383-384
3. Livingstone V. 1996, *Too Much of a Good Thing, Canadian Family Physician*, Vol 42, p89-99
4. Foda, M. I., Kawashima, T., Nakamura, S., Kobayashi, M., & Oku, T. (2004) Composition of Milk Obtained From Unmassaged Versus Massaged Breasts of Lactating Mothers. Journal of Pediatric Gastroenterology and Nutrition. Vol 38(5), p 484-487
5. Cotterman K.J. Reverse Pressure Softening A Simple Tool to Prepare Areola for Easier Latching During Engorgement. J Hum Lact 2004 20 227-237
6. Lauwers, J., Swisher, A., 2011, Counseling the Nursing Mother: A Lactation Consultant's Guide. 5th Ed. Jones and Barlett Learning USA. p 497-500.

Thrush

Needs and/or Problems	Action	Rationale	Desired Outcome
Maternal Nipple Thrush ** Nipple Thrush **NB:** Differentiate between nipple vasospasm Itchy pink/red painful nipples and areola sometimes associated with nipple damage Sore breast/nipple during and after feeds with no apparent nipple damage Shooting, burning pain radiating through the breast (only if in combination with other symptoms) Recent antibiotic use in mother or baby History of vaginal thrush or fungal infection in household	• Antifungal treatment topically to nipples and baby's mouth 4 times a day after feeds*, for fourteen days (Miconazole gel)	• Should eliminate fungal infection	Breast comfort Pain free breastfeeding and a healed nipple
	• Hygiene e.g. meticulous hand washing, wash underwear, towels etc in hot water (over 50°C) and sun dry.	• Good hygiene will prevent the spread of thrush	
	• Keep nipples dry by changing nursing pads frequently and air nipples when possible. • Change and wash bra daily	• Should speed up resolution	
If slow or no improvement	• Oral Fluconazole: 150mg-1 Capsule every 2nd day for 3 doses followed by Nystatin 500,000 units x 2, three times a day and Miconazole oral gel to nipples x 4 per day and review in 1 week. • If pain not improving consider repeating Fluconazole course as above or one capsule daily for up to 10 days • If no improvement after further course consider oral ketoconazole	• If infection is chronic mother may require systemic treatment	Symptoms resolve Prevention of recurrence of infection
	• Diet modification. Avoid foods containing yeasts, moulds, fungi, sugar and starchy foods.	• Dietary changes have been shown to help resolve symptoms • Establishes a normal colonizing bacterial flora which will limit fungal growth	
	• Additional acidophilus e.g. Yoghurt and/or probiotic capsule can be taken by baby's mother	• A specific oligosaccharide in human milk should protect the baby from thrush	

*It is unusual for exclusively breastfed infants from birth to be infected with thrush due to the oligosaccharides in breastmilk

**Mammary ductal thrush has not been proven in the literature

Thrush cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
Baby Oral Thrush White patches resembling milk curds on palate, tongue or inside cheeks Exclude tongue/palate causes of white tongue i.e. tongue-tie	• If baby has oral thrush treat with antifungal medication – either gel or oral drops and see maternal management	• Should eliminate signs and symptoms of thrush	
	• If baby is using a dummy discourage mother from placing it in her own mouth prior to giving it to baby. • Meticulous hand washing	• Any introduction of further bacteria in baby's mouth will delay resolution	Eradication of thrush and preservation of breastfeeding
Anal Thrush Raised red pustules or scalded looking buttocks	• Keep area clean and dry • Expose to air as often as possible • Topical application of antifungal cream	• Candida thrives in a warm, moist environment	Eradiation of thrush and mother more aware of prevention
Sterilisation of Feeding Utensils	• Boiling for 5 minutes is recommended	• Thrush spores can survive low temperatures. • Spores are heat sensitive over 50°C	Adequate cleaning of equipment

***NB Antifungal medication should be continued for 2 weeks**

1. Amir L, et al, *Candida Albicans. Is it Associated with Nipple Pain in Lactating women*, 1996, Gyn & Ob Investigation, 41:30-34
2. Amir L, *Candida and the Lactating Breast, Predisposing Factors*, 1991, Journal of Human Lactation 7(4), p177-181
3. McVeagh P & Brand Miller J, *Human Milk Oligosaccharides, Only the Breast*, 1997, J Paediatrics Child Health, 33:281-28
4. Riordan J,& Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA
5. Medications in Pregnancy and Lactation Service Fact Sheet https://thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/breast-and-nipple-thrush.pdf
6. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013) . Jones and Bartlett

Nipple Vasospasm

Needs and/or Problems	Action	Rationale	Desired Outcome
Numbness, burning, tingling and pain of nipple associated with blanching. Appears to be associated with referred breast pain from 3-4 weeks	• Check for oral anomaly in the baby • Observe feed • Assess positioning and attachment • Assess nipple post feed for signs of compression	• Blanching of the nipple due to mechanical compression may occur with poor positioning and attachment	No nipple compression post feed Pain subsides
Compression persists, despite optimal attachment	• Ensure positioning and attachment are optimal	• Attempt to minimise nipple compression	
	• Manually reshape nipple after feed • Avoid cold air and apply warm compress to nipple immediately after feed	• Encourages blood flow to nipple	
	• Avoid caffeine	• Caffeine has been shown to exacerbate condition	
	• Discourage smoking refer for extra support e.g. Quit Program	• Even 2 cigarettes per day may increase vascular resistance by 100% and decrease cutaneous blood flow by 40%	Discomfort is eliminated or kept to a minimum
	• Suggest that mother breastfeeds for as many feeds as she can and expresses at other feeds and offers EBM	• May encourage mother to continue with breastfeeding. Compression tends to improve as baby grows	Mother gradually resumes full breastfeeding with no nipple compression or pain
Mother has family history of circulation problems/Raynauds phenomenon	As above • Breastfeed in a warm environment • Supplements such as; fish oil, evening primrose oil, supplemental magnesium and calcium and Vitamin B6.	• May be induced by cold exposure or emotional stress	
	• Nifedipine (calcium channel blocker) in sustained release formulation providing 30-60mg per day are suggested	• Has been found clinically useful for nipple vasospasm and transfer through breastmilk is clinically insignificant	Mother is able to continue breastfeeding with minimal discomfort
	• Refer to an Immunologist for full investigation	• Has been linked with auto-immune conditions	Complete diagnosis is made

1. Coffman JD, 1990, *Pathogenesis and Treatment of Raynaud's Phenomenon Cardiovas Drugs*, Ther 4:45-51
2. Cooke ED, Nicolaides AN 1990, Raynaud's Syndrome BMJ 300: 553-555
3. Laureen Lawlor Smith & Carolyn Lawlor Smith, 1996, *Nipple Vasospasm in the Breastfeeding Women Breastfeeding Review*: No1 May, p37-39
4. Hale, T. *Medications and Mother's Milk 2014*, 16th Edition, Pharmasoft Medical, USA
5. Lantry M, *Lactational Breast Pain – Is it really Thrush? Exploring a Growing Concern*, 2003, International Lactation Consultants Conference, Sydney

6. Lauwers, J., Swisher, A., 2011, Counseling the Nursing Mother: A Lactation Consultant's Guide. 5th Ed. Jones and Barlett Learning USA. p 497-500.

Ductal Bleeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Antenatal Spontaneous bleeding from the ducts via the nipple	• Previous breast history eg. surgery, infections, trauma • Assess if discharge unilateral or bilateral	• Single duct unilateral discharges are more likely to be surgically significant	Referral to specialist if necessary
	Full breast examination and ultrasound if necessary to eliminate the following:		
	• Trauma	• Mother may have been expressing, nipple rolling or wearing breast shields	
	• Intraductal papilloma-	• Bleeding usually spontaneous and unilateral – usually no palpable mass.	
	• Fibrocystic disease	• Common in childbearing years, often regresses during pregnancy	
	• Vascular engorgement	• May be pain, tenderness and palpable thickening associated with rapid development of the alveoli and increased vascularisation	Further investigations if necessary
Postnatal Red tinged, pink or rusty breastmilk – commonly known as rusty-pipe syndrome	• Ensure latching is correct. If milk does not clear within 2-3 days further investigation may be necessary • Reassure mother that her milk will not harm baby. Babies may have a coffee ground vomit and mothers should be reassured that this is not a sign of harm to the baby.	• Seems to be more common in primiparous women and does not cause any discomfort or harm to both mother or baby	Bleeding stops spontaneously within the first few days

1. Lawrence RA & RM, *Breastfeeding, A Guide for the Medical Profession* 2005, 6th Edition, Mosby Co, St Louis, p 604.
2. Kline T & Lash SR, *The Bleeding Nipple of Pregnancy and Post Partum Period: A Cytologic and Histologic Study*., 1964, Acta Cytol 8:336
3. Riordan J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA,

White Spot/Milk Blister

Needs and/or Problems	Action	Rationale	Desired Outcome
Visible white spot on the nipple which may be accompanied by persistent pain and/or blockage. Usually occurs after milk supply well established and 4mm or less in diameter			
If **not** accompanied by pain or blockage	• The best treatment is no treatment, providing milk spot sheds spontaneously within a few days	• May improve spontaneously. Risk of infection if interfere unnecessarily	White Spot resolves and breastfeeding continues
If **is** accompanied by pain and blockage	Procedure: • Advise mother that there is a risk of infection and gain her verbal consent. Encourage her to seek medical advice for antibiotics if signs of infection manifest. Use aseptic technique (thorough handwashing, sterile gloves, alcohol wipes to the area prior to the procedure) • Peel away epidermis overlaying the milk spot with a sterile disposable 25 gauge needle using the bevelled edge of the needle not the point • Gently compress around the areola and express any stringy plugs • Observe feed – aim baby's chin towards any blockage	• Lower jaw is more active when baby sucks • Continued blockage will lead to further complications	Continued breastfeeding
Persistent White Spot	• Reassurance of mother • Give mother input on self management technique • Olive oil can also be applied to damp cloth. Gently rub affected nipple with damp cloth after softening skin (e.g. in warm bath)	• Mother is able to self manage	Mother self manages and continues breastfeeding

1. Lawrence RA & RM, 2011, *Breastfeeding, A Guide for the Medical Profession*, 7th Edition, Mosby Co, St Louis
2. Riordon J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA

Breast Refusal

Needs and/or Problems	Action	Rationale	Desired Outcome
Baby refusing both breasts	Full history • Age of baby • How long has baby been refusing • Feeding, sleeping pattern • Solids/formula use, when and how much • Dummy use • Assess baby for signs of (a) Illness (c) Teething (b) Lethargy (d) Recent immunisation • If baby is at risk of dehydration, supplemental feeding may be required	• May be age appropriate eg. baby may be self weaning, attracted by another source • Baby may be tired not hungry • Baby may be disinterested due to illness • To maintain adequate health of baby until solution found	
	Assess mother and eliminate/treat obvious causes: • Mastitis • Breast changes • Oversupply • Strong milk ejection reflex • Low supply • Commencement of contraception • Pregnancy • Menstruation	• Milk may taste hotter and saltier • Hormonal changes can affect taste of breastmilk	
	Never force-feed. Reassure mother that it is usually temporary. Offer suggestions for encouraging baby to feed: • Minimise distractions • Try different positions • Try to feed whilst bathing together • Skin to skin contact • Offer breast when baby is sleepy • Suspend solids • Reduce sucking from other sources eg; dummy NB Maintain milk supply by expressing	Relaxing the baby has been found to decrease chances of baby refusing the breast	Resolution of problem/interruption Resumption of breastfeeding
Refusing one breast only, after previously having both breasts	Examine breast fully to assess for breast changes and refer for further investigation if necessary	May be an early sign of breast cancer Baby may obtain adequate nutrition with one sided feeding	Causative factor is isolated and managed appropriately Baby's feeding needs are met

1. Goldsmith HS, *Milk Rejection Sign of Breast Cancer*, 1974, Am J Surg, 127: p 280-281.
2. Australian Breastfeeding Association Booklet Series. *Coping with Breast Refusal*, 1999, Victoria
3. Lawrence RA & RM, 2011 Breastfeeding, *A Guide for the Medical Profession*, 7th Edition, Mosby Co, St Louis.
4. Brodribb, W , *Breastfeeding Management in Australia*, 2012, 4th edition, Australian Breastfeeding Association, Australia

Sucking Problems and Oral Anomalies

Needs and/or Problems	Action	Rationale	Desired Outcome
Baby is unable to latch to the breast and feed effectively despite skilled assistance Examples include: • Audible clicking • Cheeks sucked in • uncoordinated or abnormal tongue movements, • baby is pulling on and off the breast, • effortful swallow/s or gurgling sounds during/post swallow • baby appears uninterested at the breast.	If baby is unable to breastfeed successfully, teach and assist mother to express her breast milk (appendix ii), and refer to **appropriate** health professional for assessment and follow up. Refer to the "Breastfeeding Flow chart for the Normal Healthy Full Term Infant in the First 48 hours" if appropriate.	Mother can be actively involved and her supply can be initiated. Many neonatal sucking problems can be corrected with specialist / skilled help e.g. Speech Pathology.	
Identify any risk / contributing factors: 1. Acute illness	Ensure consultation and collaboration with appropriate allied / other health professional/s at all times. In addition to this: 1. Work closely with medical team and only proceed with breastfeeds once baby is medically well enough to do so. Proceed cautiously with breastfeeds with close monitoring at all times of baby's ability to cope.		
2. Maternal drugs in labour	2. Investigate potential effect of specific drugs used in labour on infant state and activity levels and time expected for effect to lift. Consult with medical team as appropriate.		

Sucking Problems and Oral Anomalies cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
3. Birth Trauma	3. Investigate area of trauma and potential impact on breastfeeding. - Handling, positioning and attachment techniques may have to be modified. See below for altered oral facial sensation and tone if relevant.	This will avoid direct touch or pressure to bruising.	Baby is assessed with appropriate and specific management implemented where indicated, resulting in baby successfully breastfeeding.
4. Structural abnormality such as a clefting condition	4. See Cleft Palate		
5. Altered oral structure/s such as tight frenulum or 'tongue tie'.	5. Examine the nature and extent of the 'tongue tie': • heart-shaped tongue at rest • decreased forward mobility of the tongue • i.e. unable to move tongue below lower gum linematernal nipple damage • family history of tongue-tie Give parents options for management and refer for appropriate follow-up for frenectomy.	Medical opinion remains divided about frenectomy, however, if baby is unable to move his tongue beyond his lower gum line he will be unable to breastfeed successfully.	Baby is appropriately assessed to see if frenectomy is necessary. Baby successfully breastfeeds.
6. Altered oral facial sensation and tone: Increased tone (hypertonia) e.g. resulting from neurological insult or injury	6. Consult Physiotherapist or Occupational therapist & Speech Pathologist for specific guidelines on positioning, handling and reducing / building tone. Try placing baby in prone position on feeder's lap before feed to encourage overall relaxation and flexion. Position for feed with focus on flexion and support; swaddling in a wrap may facilitate this.	This will reduce the potential for hypertonic reactions and patterns in the case of hypertonia, by facilitating greater organisation and control (sucking is a flexor skill, flexed positioning helps reduce the occurrence and effects of oral facial hypertonia).	
Decreased tone (hypotonia) e.g. associated with Down's Syndrome and myopathies)	See Down Syndrome		

1. Evans Morris, S and Dunn Klein, M. (2000) *Pre-Feeding Skills – Second Edition* USA: Therapy Skill Builders
2. McCurtin, A (1997) *The Manual of Paediatric Feeding Practice UK*: Winslow Press
3. Riordon J & Wambach K, *Breastfeeding and Human Lactation*, 2010, 4th edition, Jones & Bartlett, USA, p 98-101.
4. Genna, C. W, 2013. Supporting Sucking Skills in Breastfeeding Infants. Jones & Barlett Learning. USA, p213-216.

Tongue-Tie

Needs and/or Problems	Action	Rationale	Desired Outcome
Tongue-Tie evident without feeding issues. Signs of Tongue-Tie • Tongue cannot extend out past the lips • Tongue cannot touch the roof of the mouth • Tongue cannot be moved sideways • Tongue tip may look flat, square or heart shaped, instead of pointy, when the tongue is extended • Frenulum may appear notched at the base of the alveolar ridge	• No immediate intervention is required, refer to lactation consultant and encourage mother to seek help if she has issues in the future	• Babies with Tongue-Tie are at increased risk for breastfeeding difficulties. Even though no intervention is required at this stage, those infants with feeding difficulties should be referred immediately to lactation consultant for further assessment.	To have a pleasant breastfeeding experience and effective milk transfer.
	• Discuss tongue-tie	• Parents are better informed about tongue-tie and possible treatment and/or management	
	• Ensure proper positioning and attachment	• To have effective milk transfer	
Signs that Tongue-Tie affect breastfeeding. • Nipple pain and damage • Misshapen nipple after breastfeeding • A compression/ stripe mark on the nipple after breastfeeding • The baby often loses suction while feeding and sucks air • The baby's mouth makes a clicking sound while feeding • The baby fails to gain weight	• Refer to a lactation consultant and paediatrician for management	• The presence of Tongue-Tie with breastfeeding difficulties in an infant should establish a valid indication for referral for frenotomy • An early referral for frenotomy would be significant in prevention of unnecessary concern for the mother-infant dyad	Rapid improvement in breastfeeding difficulties.
	• Ensure proper positioning and attachment	To optimise potential for correct attachment despite Tongue-Tie	

Tongue-Tie cont...

Needs and/or Problems	Action	Rationale	Desired Outcome
If the lactation consultant and paediatrician has reviewed the frenulum, a frenotomy maybe recommended due to: • Nipple pain and damage • Misshapen nipple after breastfeeding • Compression/ ridging on the nipple after breastfeeding • The baby is unable to maintain a vacuum seal • The baby's mouth makes a clicking sound while feeding • The baby fails to gain weight	• A complete history should be taken prior to physical assessment to exclude other causes of breastfeeding difficulties.	• To establish a history of familial Tongue-Tie and any previous experiences	To support the initiation and continuation of breastfeeding, protecting the maternal nipple from trauma, ensuring effective transfer of breastmilk to the infant and improve satisfaction in breastfeeding for parents.
	• The mouth should be carefully inspected	• To exclude any other oral pathology e.g. cleft palate	
	• Using the Hazelbaker Assessment Tool for Lingual Frenulum Function, score the appearance and function of the infant's tongue.	• A proper assessment is required to determine tongue function and effect on breastfeeding	
	• The parents should give informed consent prior to the release	• Consent required to perform any invasive procedure	
	• An appropriately credentialed staff member should perform Tongue-Tie release	• Uniform credentialing to ensure consistency and effectiveness of practice • In early infancy (up to 4 months), the procedure may be performed without anaesthesia with little discomfort to the infant. • If breastfeeding is painful and there is poor milk transfer and a tongue-tie has been diagnosed, then frenotomy can improve the baby's ability to breastfeed.	
	• If the frenulum is thickened and release is required the infant should be referred to a paediatric surgeon on discharge.	• A thickened frenulum requires closer management by a paediatric surgeon	

1. The Royal Women's Hospital, *Tongue-Tie: information for families*, 2008, The Royal Women's Hospital, Victoria Australia.
2. Finigan V. & Long T., *The effectiveness of frenulotomy on infant-feeding outcomes: a systematic literature review*, 2013, Evidence Based Midwifery 11(2):40-45.
3. Kumar M. & Kalke E., *Tongue-tie, breastfeeding difficulties and the role of Frenotomy*, 2012, Acta Paediatrica 2012 101, pp. 687-689.
4. Australian Breastfeeding Association, *Breastfeeding: breast and nipple care,* 2012, Booklet Series, Victoria
5. Ballard J.L., Auer C.E. & Khoury J.C. *Ankyloglossia: Assessment, Incidence and Effects of Frenuloplasty on Breastfeeding Dyad*, 2002, Paediatrics 110(5): 1-6.

Hazelbaker Assessment Tool for Lingual Frenulum Function (HATLLF)

Appearance Items	Score
1. Appearance of tongue when lifted	
→ Round OR square	2
→ Slight cleft in tip apparent	1
→ Heart-shaped	0
2. Elasticity of frenulum	
→ Very elastic (excellent)	2
→ Moderately elastic	1
→ Little OR no elasticity	0
3. Length of lingual frenulum when tongue lifted	
→ More than 1 cm OR embedded in tongue	2
→ 1 cm	1
→ Less than 1 cm	0
4. Attachment of lingual frenulum to tongue	
→ Posterior to tip	2
→ At tip	1
→ Notched tip	0
5. Attachment of lingual frenulum to inferior alveolar ridge	
→ Attached to floor of mouth OR well below ridge	2
→ Attached just below ridge	1
→ Attached at ridge	0
TOTAL APPEARANCE SCORE	

Function Items	Score
1. Lateralization	
→ Complete	2
→ Body of tongue but not tongue tip	1
→ None	0
2. Lift of tongue	
→ Tip to mid-mouth	2
→ Only edges to mid-mouth	1
→ Tip stays at alveolar ridge or rises to mid-mouth only with jaw closure	0
3. Extension of tongue	
→ Tip over lower lip	2
→ Tip over lower gum only	1
→ Neither of above, OR anterior or mid-tongue humps	0
4. Spread of anterior tongue	
→ Complete	2
→ Moderate OR partial	1
→ Little OR none	0
5. Cupping	
→ Entire edge, firm cup	2
→ Side edges only, moderate cup	1
→ Poor OR no cup	0
6. Peristalsis	
→ Complete, anterior to posterior (originates at the tip)	2
→ Partial: originating posterior to tip	1
→ None OR reverse peristalsis	0
7. Snapback	
→ None	2
→ Periodic	1
→ Frequent OR with each suck	0
TOTAL FUNCTION SCORE	

FUNCTION ITEMS SCORE

14 Perfect score (Regardless of *Appearance Item* score)

11 Acceptable, if *Appearance Item* score is 10

<11 Function impaired
- Frenotomy should be considered if management fails.
- Frenotomy necessary if *Appearance Item* score is <8.

Ballarat Health Service (2014). *Clinical Practice Protocol: Breastfeeding Challenges –Management of Tongue Tie*. Ballarat Health Service.

Lactational Breast Pain

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother breastfeeding and experiencing breast pain	Full history and breast examination to eliminate any of the following possible causes: • Breast fullness • Blocked ducts • Nipple white spot • Mastitis • Breast abscess • Thrush • Nipple vasospasm	Eliminating possible causes should allow for correct management of the problem	Appropriate management is instigated and breast pain resolves

1. Riordon J & Wambach K, Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA

Breastfeeding Multiples

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother has twins Both babies with mother	• Encourage individual rather than simultaneous feeding until at least one baby is assessed for effective feeding.	Encourages mother to become familiar with individual baby's needs	Babies are breastfed and supply is adequate
	• Allocate one breast per baby per day. • Mother to decide- rotate breasts on a day to day basis or alternate breasts and babies each feed • Only feed babies together if awake and additional help available • Progress to twin feeding when mother feels ready and attempt this prior to leaving hospital unless mother prefers not to • Attach more difficult baby first	• Mother gains experience whilst there is professional assistance available	
One baby in nursery	• Allocate one breast per baby per day. • EBM to nursery if baby is not going to the breast	• Ensures both babies receive breastmilk and both breasts are evenly stimulated	Both babies receive breastmilk
Both babies in nursery	• Initiation early of hand expressing progressing to use of double pump by day 2 • See "Expressing Breastmilk"	• Should provide maximum stimulation to breasts	Both babies receive breastmilk
Mother has triplets	• Discuss options with mother eg Fully breastfeeds 3 babies or breastfeeds two and bottle feeds one – NB it is important with exclusive breastfeeding to limit feeding time of first two babies and feed third from both breasts using a system of "triangular rotation"	• Supply should equal demand	Mother manages feeds successfully with desired option

1. Australian Breastfeeding Association, Breastfeeding Twins, Breastfeeding Higher Order Multiples, 2012, Booklet Series, Victoria
2. Kefhoff Gromada K, Mothering Multiples,2003, La Leche League International, IL, p113-119.
3. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013) . Jones and Bartlett

Breastfeeding a Baby with Down Syndrome

Needs and/or Problems	Action	Rationale	Desired Outcome
Baby is Down Syndrome	• Ongoing monitoring of progress • Mother is encouraged to breastfeed • Keep mother and baby together during hospital stay (unless baby is unwell)	• Regular review of growth paying particular attention to weight and length. Utilise Down Syndrome growth chart • Baby is at increased risk of upper respiratory tract infection and otitis media	Mother is aware of increased benefits of breastfeeding in this situation
	• Initiate breastfeeding in the usual manner. • Assess baby's ability to suck efficiently and transfer milk	• May take longer to establish successful breastfeeding due to possible increased incidence of poor muscle tone	Baby is breastfed
Positioning at breast if muscle tone poor	• Attempt to latch baby in a more upright position supporting baby's chin and mother's breast	• Assists in maintaining attachment	Baby is better able to cope with the flow of milk
	• Oral exercises may be of benefit	• Builds tone and strength around face and mouth	Baby has decreased risk of poor weight gain if milk delivery is assisted and energy is conserved
	• Position supportively in flexed position	• Flexed positioning assists with co-ordination and control by providing greater stability	
Baby unable to breastfeed effectively	• Encourage mother to express and offer EBM from bottle with soft teat • Offer cheek support with bottle feeds.	• Soft teat makes it easier to transfer milk • Cheek support during sucking bursts increases sucking strength	Baby receives breastmilk
Ongoing monitoring of progress	• Regular review of growth paying particular attention to weight and length	• These babies grow at a slower rate	Baby has an acceptable weight gain

1. Selikowitz, M *Down Syndrome: The Facts*, 1997, 2nd Edition, Oxford Univ Press Australia
2. Australian Breastfeeding Association, *Breastfeeding Your Baby with Down Syndrome*, Booklet Series, 2011, Victoria
3. Marmet C & Shell E, *Training neonates to Suck Correctly*, 1984, MCN, Vol 9 No 6
4. Cronk C et al, *Growth Chats for Children with Down Syndrome*, 1998, Paediatrics, Volume 81, No 1
5. Wolf, L and Glass, A.R, 1992, Feeding and swallowing disorders in infancy: Assessment and management Tuscan, AZ: Therapy Skill Builders

Breastfeeding a Baby with a Cleft Palate/Lip

Needs and/or Problems	Action	Rationale	Desired Outcome
Baby has a **cleft palate** Often identified with clicking noise during breastfeeding due to air entry (baby is not able to breastfeed successfully when there is any air entry). Also may be identified by poor milk transfer due to baby having an inability to maintain sufficient oral pressure to extract milk from breast.	• Examine cleft to establish size and position • May be unilateral or bilateral • May extend to the hard and soft palate • Cleft may be sub-mucous	• The prognosis for successful feeding greatly depends on the size and position of the cleft as positive and negative pressures involved in sucking are affected.	
	• Encourage giving breastmilk • Mother may need encouragement and support to express long term • Discuss other options of feeding baby expressed breastmilk	• Breastmilk lessens the development of otitis media (ear infection)	
	• If small cleft in the hard palate- try feeding with a nipple shield	• May occlude the cleft- normal suction	
	• Encourage mother to familiarise baby with her breasts and have skin-to-skin contact from birth.	• May be helpful to keep baby familiar with the breast and give him some suckling experience, which will help to satisfy him and help to strengthen the oral structure	
	• Offer the breast in both right and left-handed underarm positions, keeping baby as upright as possible.	• Upright positioning will allow milk to move into the pharynx and away from the nasal cavity	
	• Consider breast compression during feeds at the breast	• May increase milk transfer	
	• Express after all breastfeeding attempts and discuss options of feeding baby the expressed breastmilk	• If extra expressing is not commenced supply will reduced, leading to a higher risk of growth deficiencies	

Breastfeeding a Baby with a Cleft Palate/Lip cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
	• Monitor weight regularly	• Timing of surgery may be dependent on baby's weight gain as well as age (usually >6 months)	Correct diagnosis is made Options are explored and an informed decision made Baby is able to obtain breastmilk
	• Using a normal bottle and teat	• Some of these babies will manage without special equipment, depending on the severity of the cleft	
	• Using an appropriate squeeze bottle and appropriate teat	• Mother can assist milk delivery by squeezing the bottle	
	• Encourage mother to enlist as much help and support as she can from family, friends, ABA and the Child and Family Health Nurse	• It can be a very time consuming and emotional experience to provide enough EBM and feed a baby with a cleft palate	
	• If mother has decided to formula feed, position baby in a fairly upright position for feeding	• Minimises problems of milk entering the baby's nose and prevents fluid getting into baby's ears	
Baby has a **cleft lip**	• Encourage mother to familiarise baby with her breasts and skin contact from birth. Feed baby in both right and left handed positions and bare breasted when practical.	• This should make it easier to introduce breastfeeding after surgery	Baby successfully breastfeeds after surgery
	• Assess and observe a breastfeed	• Success dependant on size of cleft, success is more likely if unilateral cleft lip in isolation.	
	• Attempt to position baby so that the breast is able to fill the cleft	• This will prevent air entry and the baby should establish a satisfactory seal to maintain sucking strength	
Baby has a **cleft lip** and a **cleft palate**	• Baby will be unable to breastfeed successfully • Management as described for cleft palate according to mothers wishes	• Baby is unable to provide a seal and extract milk from the breast directly, however milk can be delivered via various methods discussed in 'Cleft Palate Management'	Baby receives breastmilk

1. Lawrence, RA & RM, Breastfeeding, A Guide for the Medical Profession, 1999, Mosby co, St Louis, p489-492
2. Australian Breastfeeding Association, Increasing Your Supply, Booklet Series, 2012, Victoria
3. Riordon J & Wambach K, Breastfeeding and Human Lactation, 2010, 4th edition, Jones & Bartlett, USA, p640-643.
4. Watson Genna, C. Supporting Sucking Skills in Breastfeeding Infants 2nd Ed. 2013 Jones and Bartlett Learning, USA, p222-226.

Breastfeeding and Gastro-Oesophageal Reflux

Needs and/or Problems	Action	Rationale	Desired Outcome
Baby is suspected to have gastro-oesophageal reflux. Some symptoms include: • Regurgitation or possetting (may be overt or silent) • Sleep disturbances • Respiratory symptoms i.e. stridor, chronic cough • Crying and irritability (not associated with any other cause such as tiredness) • Feeding difficulties i.e. tongue tie and/or lip tie, oversupply, over-feeding	• Encourage mother to continue breastfeeding by discussing the importance of breastmilk and risks associated with formula feeding	• Recent data indicated that physiological gastro-oesophageal reflux is less, and has a shorter duration in breastfed babies compared with formula-fed babies	Mother continues to breastfeed Reflux kept to a minimum
	• Assess if associated with an oversupply of breastmilk (see Oversupply)	• Symptoms may be associated with volume of milk baby receives and may be lessened with good management	
	• Encourage mother to feed baby in semi upright position if possible	• Baby may have less symptoms	
	• Gentle handling and burping of baby after a feed • Cuddle baby and keep baby in the semi upright position for approximately 30 minutes after feed • Avoid use of thickened feeds	• May reduce frequency of reflux episodes, but increases exposure of the oesophagus to acidic gastric material, as it does not clear as quickly.	
Symptoms do not resolve	• Refer baby for further investigation e.g. Impedance or oesophageal pH probe or an endoscopic examination to determine extent of reflux. • Medication may be required if diagnosis confirmed.	• Baby is not treated unnecessarily.	Problem is diagnosed Mother continues to breastfeed Reflux kept to a minimum

1. Tan, JCH & Jeffery, HE 1995, *Factors that influence the choice of infant feeding*. Journal of Paediatric Child Health, 31, pp375-378
2. Heacock H et al, 1992, *Physiological gastroesophageal reflux in healthy newborn infants*. Journal of Paediatric Gastroenterology & Nutrition 14, pp 41-46
3. Australian Breastfeeding Association, Topics in Breastfeeding Gastro-oesophageal Reflux and the Breastfed Baby, Set XX1, 2011, Lactation Resource Centre, Victoria
4. Riordon J & Wambach K, Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA
5. Lawrence, RA & Lawrence, R.M., Breastfeeding, A Guide for the Medical Profession (7th Ed), 2011, Elsevier Mosby co, St Louis.
6. Lauwers, J., Swisher, A., 2011, Counseling the Nursing Mother: A Lactation Consultant's Guide. 5th Ed. Jones and Barlett Learning USA. p 304-306.
7. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett p378-379
8. Walker, M. Breastfeeding Management for the Clinician- Using the Evidence. 2014. Jones and Bartlett, Publishers USA. p 445-447

Lactose Intolerance in the Breastfed Baby

Needs and/or Problems	Action	Rationale	Desired Outcome
This is a rare problem in infancy and is usually associated with gastrointestinal illness or antibiotic use or feeding mismanagement Baby is fully breastfed and has symptoms of lactose intolerance: • Irritable • Loose frothy/watery stools • Scalded anal area • Passes flatus frequently • Stools may test positively to reducing substances if mother has an oversupply of breastmilk making this test of questionable use **Primary Lactose Intolerance** is an extremely rare genetic condition which requires medical intervention from birth *Lactose Overload: Lactase levels in the baby's gut are insufficient to digest the lactose intake and be associated with feeding mismanagement.*	• Reassure mother that this not an indication to wean.	• Functional lactase deficiency (incomplete absorption of lactose) commonly occurs in babies who are obtaining large amounts of breastmilk and may be evidenced by larger than expected weight gains	Baby continues to thrive with appropriate weight gain Baby more settled Bowel actions less frequent Baby's symptoms resolve and milk supply settles
	• Assess if it is associated with an oversupply of breastmilk and manage accordingly (see Oversupply) • Reassure parents that it is likely to settle with time.	• May settle spontaneously with good breastfeeding management	
	• Ensure correct positioning & attachment	• Should ensure adequate breast drainage	
	• Encourage baby to finish the first breast prior to being offered the second breast	• This management strategy resulted in partial or complete resolution of problems in 79% babies	
	• Aim for minimum three hours between feeds	• Usually associated with an oversupply of breastmilk and this will help to reduce supply	

1. Woolridge MW & Fisher C, 1988, *Colic, overfeeding and symptoms of malabsorption in the breastfed baby: A possible artifact of feed management*, Lancet, Aug1 13p 383-384
2. Lawlor-Smith C & Lawlor-Smith L, 1998, *Lactose intolerance,* Breastfeeding Review Vol 6 No 1, 1998, p29-30

Lactose Intolerance in the Breastfed Baby cont...

Needs and/or Problems	Action	Rationale	Desired Outcome
Secondary Lactose Intolerance is also an uncommon problem in infancy and is usually associated with gastrointestinal illness, damage to the intestinal mucosa, antibiotic use or protein intolerance (cow's milk or soy in mother's diet), celiac disease and small bowel overgrowth. It is usually transient.	• Continued breastfeeding is recommended during intestinal infection	• In most cases the intolerance due to infection persists for less than one week	
	• Post infection if a completely lactose free diet has been advised until the bowel heals the mother can express to maintain her supply. The baby may be fed with EBM treated with lactase or a lactose free formula	• Damage to the baby's intestine is extreme , causing malnutrition	
	• If due to protein intolerance- remove the protein out of the mother's diet.	• The intestine can heal and the symptoms will resolve	Breastmilk supply is maintained and baby continues to breastfeed

1. Brodribb W (Ed), Breastfeeding Management in Australia. A reference and study guide. 4th Ed, 2012. Australian Breastfeeding Association, p403-407.
2. Lawrence, RA & Lawrence, R.M., Breastfeeding, A Guide for the Medical Profession (7th Ed), 2011, Elsevier Mosby co, St Louis.

Breastfeeding with Special Needs – Maternal

Breast Augmentation/Reduction Surgery

Needs and/or Problems	Action	Rationale	Desired Outcome
Breast Augmentation Surgery	Full history including: • Reason for surgery- rule out breast Hypoplasia	• If limited breast tissue present prior to augmentation, supply is likely to remain insufficient	Enables the health professional to assess the possible likelihood of breastfeeding success
	• Age at which surgery carried out • Breast development • Breast changes during pregnancy	• May all impact on breastfeeding success	
Appropriate Antenatal Assessment	Breast examination assess: • Surgical technique used e.g. infra mammary, axillary incision • Location of implant e.g. behind or in front of chest muscles. • Discuss above implications with the mother • Never guarantee full breastfeeding success	• Method of surgery may impact on breastfeeding success	Mother has realistic expectations of likelihood of breastfeeding success
	• Suggest a “wait and see” approach • Refer to hospital Lactation Consultant (if available) for additional support in the postnatal period	• Previous breast surgery has a greater than 3 fold risk of lactation insufficiency, compared with women who have not had surgery	
Breast Augmentation by Injection e.g. hyaluronic acid- (Macrolane). A more recent and common technique originating in Asia).	• Full history as above, may impact on breastfeeding	• Effects are not permanent, usually last 18 months to 2 years. Does not transfer into breastmilk. • Increased risk of mastitis due to multifocal injection sites and the products unique ability to retain water.	Mother breastfeeds successfully with no associated breast problems

Breast Augmentation/Reduction Surgery cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
Breast Reduction Surgery Appropriate Antenatal Assessment	Breast examination to assess: • Surgical technique used (not always possible to determine): • pedicle technique • free-nipple technique	• Method of surgery may impact on breastfeeding success • Removing the nipple and areola entirely severs the blood supply and damages the nerves and makes breastfeeding success less likely	Mother has realistic expectations of likelihood of breastfeeding success
	• Discuss above implications with the mother • Never guarantee full breastfeeding success • Suggest a "wait and see" approach	• Success cannot be predicted. Breastfeeding success rates vary from 19-72 percent.	
	• Refer to hospital Lactation Consultant (if available) for additional support in the postnatal period	• Previous breast surgery has a greater than 3 fold risk of inadequate milk removal, compared with women who have not had surgery	
Postnatal breastfeeding	Mother requires progressive assessment • Aware of breast changes over first few days • Aware of signs of milk let-down • Ability to drain breasts adequately once mature milk is "in"	• May be an increased risk of mastitis • Unable to predict success but may be able to intervene with additional strategies early e.g. extra expressing for stimulation	Mother is able to breastfeed to her full potential and is given available options for management as need arises.
	Baby requires progressive assessment • Observed change in baby's sucking pattern during feed • Observe for change in stools • Monitor output • Assess behaviour • Ongoing weights	• Baby must be monitored for signs of failure to thrive.	Baby's needs are not compromised
Baby requires complementary feeding	• Continued support around correct latch and establishing breastfeeding • Ongoing monitoring of baby's weight • Discuss the use of a lactation aid	• This will help maintain the breastfeeding connection between mother and baby.	Supply reaches its full potential and complementary feeding is kept to a minimum

1. Neifert M et al, The Influence of Breast Surgery, Breast Appearance and pregnancy Induced Breast Changes on Lactation Sufficiency by Infant Weight, 1990, Birth: 17: 31-38
2. Riordon J & Wambach K, Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA
3. Hale, T. Medications and Mother's Milk 2014, 16th Edition, Pharmasoft Medical, USA

Medication & Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother requires medication for a specific condition	Utilise *Hale, 2012* or phone Mothersafe: 9382 6539 (Sydney metropolitan) 1800 647848 (Non metropolitan area) Fully evaluate transference into breastmilk and the degree of exposure to the baby	• All medications penetrate milk to some degree, however concentrations of most medications are exceedingly low (usually<1%)	Mother is adequately treated Breastfeeding bond remains uninterrupted Baby continues to breastfeed with no apparent concern
	General Rules: • Determine if drug is absorbed from GI tract	• Many drugs eg; some antibiotics are poorly absorbed. Compare the paediatric dose and determine if amount absorbed by baby has been reported to produce side effects	
	• Determine if milk/plasma ratio is high	• If the milk concentration of the drug is high it should be avoided if possible	
	• Be cautious of drugs that have long paediatric half-lives	• Try to choose shorter half life drugs, • These drugs tend to peak rapidly and dissipate rapidly but may continually build up in the baby's plasma over time	
	• Choose drugs that have a higher protein binding	• These do not transfer as readily to the milk or the baby	
	• Be cautious with drugs that affect the brain and CNS, such as lipid soluble drugs, which readily enter breastmilk e.g. psychotherapeutic drugs.	• Frequently transfers into breastmilk at higher levels due to their lipid solubility.	
	• Consider peak time of drug and encourage breastfeeding just before the dose	• This is when the drugs are in their highest concentration in the breastmilk • Do not exceed recommended doses	

NB Pharmaceutical Manufacturers' inserts discourage breastfeeding for fear of litigation not necessarily for well-founded pharmalogical reasons

1. Hale T & Rowe, H Medication and Mothers' Milk, 2014, 16th Edition, Pharmasoft Medical, USA
2. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013) . Jones and Bartlett

Diabetes and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother has Type 1 Diabetes (Insulin Dependent) i.e. her body does not produce Insulin. This is a genetically pre-disposed condition Baby may have co-morbidities eg. prematurity, perinatal asphyxia	• Appropriate prenatal education for breastfeeding, including particular benefits.	• Informs mother of what to expect and may feel more motivated to breastfeed. • May have a 24 hour delay in Lactogenesis II (milk coming in)	Baby is fully breastfed Mother is able to self monitor her Insulin needs (may reduce approx. 27%) Mother is aware that a sudden drop in her blood glucose levels may lead to a drop in her milk production Weaning must be gradual to allow for changes in diet and Insulin
	• Inform mother of protocols in the hospital that may impact on breastfeeding and mother baby contact and strategies to overcome these challenges. e.g. baby may require admission to NICU with minimal stay if required	• Informed of possible separation due to NICU admission	
	• Advise mother to have a low GI carbohydrate snack at hand whenever breastfeeding	• Mother is at risk of sudden onset of hypoglycaemia when breastfeeding	
	• Monitor baby's BGL as per policy	• Baby is at increased risk of hypoglycaemia	
	• Breastfeeding or EBM as soon as possible. If mother intends to express antenatally (see Antenatal Expressing)	• Failure of early removal of colostrum is associated with delayed lactogenisis II	
	• Early expressing if baby is not attaching to the breast	• EBM is available for baby.	
	• Avoid use of infant formula	• If a genetically pre-disposed baby is given standard infant formula in the first 3 months – 52% more likely to develop Type 1 diabetes	

Diabetes and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother has Gestational Diabetes i.e. her body is not able to use the Insulin that is produced. May be Diet Controlled or Insulin Dependent	• Appropriate prenatal education for breastfeeding including particular benefits.	• Informs mother of what to expect and may feel more motivated to breastfeed.	Mother's diabetes reverts to normal Baby is fully breastfed
	• Skin-to-skin and early encouragement of breastfeeding	• Women with Gestational Diabetes are twice as likely to develop type 2 diabetes if they do not lactate following the birth of the baby whose pregnancy provoked gestational diabetes.	
	• Keep mother and baby together	• Exclusive breastfeeding in the first 6 months and longer duration of breastfeeding associated with reduction in childhood obesity for baby's whose mothers have GDM	
	• Avoid use of infant formula	• Improves glucose metabolism	
	• Monitor blood glucose levels according to hospital policy	• Infants of GDMs who were breastfed in Birthing Unit room had a significantly lower rate of borderline hypoglycaemia than those who were not breastfed early	
	• On-going advice re diet and exercise and refer to diabetes educator for general diabetes prevention advice	• Up to 50% of women who develop Gestational Diabetes will get Type 2 Diabetes later in life	
Mother has Type 2 Diabetes i.e. her body is not able to use the Insulin that is produced May be controlled by diet, oral medication or Insulin	• Appropriate prenatal education for breastfeeding • Skin-to-skin and early encouragement of breastfeeding • Keep mother and baby together • Avoid use of infant formula	• Informs mother of what to expect and may feel more motivated to breastfeed.	
	• Monitor blood glucose levels according to hospital policy • On-going advice re diet and exercise	• Improves glucose metabolism	• Mother's health is maintained • Baby is fully breastfed

1. Fava D et al, 1994, Relationship between dairy product consumption and incidence of IDDM in childhood in Italy, Diabetes Care, 17: 1488- 1490
2. Verge C et al, Environmental factors in childhood IDDM. A population-based, case-control study, 1994, Diabetes Care, 17: 1381-1389
3. Wah Cheung N et al, 2007 Diabetes Research and Clinical Practice, 77 (2), 333-334
4. Kjos SL et al, 1993. The Effect of Lactation on Glucose and Lipid Metabolism in Women with Recent Gestational Diabetes, Obstet Gynaec, 82: 451-455
5. Riordan J & Wambach K, Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA
7. Crume T,L. et al 2011 Long term impact of neonatal breastfeeding on Childhood adiposity and fat distribution among children exposed to diabetes in utero Diabetes Care vol 34, no 3 pp641-645
8. Chertok et al 2009, Effects of early breastfeeding on neonatal glucose levels of term infants born to women with gestational diabetes Journal of Human Nutrition and Diabetes Care vol 22, no 2 pp166-169

9. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett
10. Soltani H. & Arden M, 2009 Factors associated with breastfeeding up to 6 months postpartum in mothers with diabetes. JOGNN Vol. 38, no. 5, pp. 586-94

Hepatitis B and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Risk of transmission of Hepatitis B at birth through breastfeeding	• All women receive Hepatitis B testing during pregnancy as part of routine antenatal care	• To identify HbsAg positive women	HbsAg positive identified
	• All neonates born to Hepatitis B Surface Antigen (HbsAg) positive women should be given immunoglobulin and 1st dose of Hepatitis B vaccine as soon as possible after birth. Baby then has second and third vaccines as per normal Hepatitis B protocol.	• This protocol has been successful in reducing the risk of neonatal transmission during breastfeeding	Transmission from mother to baby prevented
	• Mother is encouraged to breastfeed and particular attention should be made to ensure mother is attaching correctly	• Benefits of breastfeeding outweigh risks of transmission • Cracked / bleeding nipples increases risk of transmission	Mother decides to breastfeed
Mother has cracked/bleeding nipples	• Educate and assist as necessary to improve positioning and attachment. If unable to attach correctly and feed then encourage mother to rest/express for 24 hours or until completely healed	• Support mother through attachment difficulties and damaged nipples.	Breastfeeding or breastmilk feeding is not interrupted
	• If baby is given Hepatitis B vaccine and immunoglobulin the baby can receive the expressed breastmilk	• Hepatitis B Vaccination and Hepatitis B immunoglobulin virtually eliminates the risk of transmission via breastmilk	
Risk of transmission of HBV from patient to health worker	• Practice standard precautions when handling breastmilk and other body fluids (standard precautions)	• Prevent transmission of HBV from patient to health workers	Transmission of HBV from patient to be prevented All health workers immunisation attended
	• Hepatitis B immunisation for health workers	• NHMRC recommends all health workers involved in patient care or in the handling of human milk or human blood/tissue be vaccinated	

1. National Health & Medical Research Council (2008). The Australian Immunisation Handbook, 9th Edition
2. NSW Health Department Factsheet, 2013. Hepatitis B.
3. NSW Health, Infection Control Policy. PD2007_036.
4. NSW Health Communicable Diseases Protocol. Hepatitis B, 2013.
5. Riordon J & Wambach K, Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA

6. Hale T & Rowe, H Medication and Mothers' Milk, 2014, 16th Edition, Pharmasoft Medical, USA,

Hepatitis C and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother has Hepatitis C and wishes to breastfeed. Possible problems: • Elevated risk of transmission: • Acute phase of illness • High viral load • Serious liver damage • Is co-infected with HIV (see "HIV and Breastfeeding)	• Inform mother re benefits of breastfeeding	• Mother can make an informed decision re breastfeeding	Mother makes an informed decision and breastfeeds successfully
	• Inform mother re known methods of Hepatitis C transmission and that breastfeeding is not a major risk factor	• Hep C RNA is not present in breastmilk and the transmission via breastfeeding appears to be low	
	• Consider reviewing viral load if PCR positive	• Increased risk of transmission with high viral load	
Mother has cracked/bleeding nipples	• Rest/express for 24 hours or until completely healed • Discard EBM if blood visible on nipple or in milk.	Lessens the chance of transmission to baby	Baby not exposed to Hepatitis C virus in maternal blood
Risk of transmission to staff	• Practice standard precautions when handling breastmilk and other body fluids see "Standard Precautions"	• Prevent Hepatitis C transmission from mother to staff	Transmission of hepatitis C virus from patient to health worker prevented

1. Holmes, J *Women & Hepatitis C The Lamp;* 1995/96 December/January
2. Latt N, 1996, Breastfeeding and hepatitis C Virus Infection – is Breastfeeding a Risk Factor for Transmission of HCV Infection? Paper presented to NSW Lactation College Inaugural Conference
3. NSW Health, Infection Control Policy. PD2007_036
4. Commonwealth Department of Health & Aged Care – National Hepatitis C Resource Manual (2008)
5. Hepatitis C- Red Book. 29th Edition 2011.
6. Hepatitis Council NSW, 2007. *Women and Hepatitis C*- A Resource for Women with Hepatitis C.
7. NSW Health Communicable Diseases Protocol. Hepatitis C, 2012.

HIV and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother has HIV and is considering breastfeeding Risk of transmission of HIV from mother to baby via breastmilk	• Inform mother regarding the known risks of transmission of HIV via breastmilk	• Australian recommendation is that breastfeeding is contraindicated in mothers with HIV.	Baby receives artificial formula Baby not exposed to HIV
	• Inform mother regarding factors likely to increase risk of transmission • Discuss and recommend formula feeding	• In Australia where safe alternatives to breastfeeding are available breastfeeding is not recommended to a HIV positive mother	
Mother has HIV and is already breastfeeding Risk of transmission of HIV from mother to baby via breastmilk	• Inform mother regarding the known risks of transmission of HIV via breastmilk	• Australian recommendation is that breastfeeding is contraindicated in mothers with HIV.	Mother is fully informed and baby is not exposed to HIV
	• Early initiation of antiretroviral therapy (ART) from 14 weeks gestation and continuing to the end of the breastfeeding period (so that abrupt weaning is not necessary)	• Several clinical trials have shown the efficacy of antiretroviral in preventing transmission to the infant while breastfeeding	
	• Inform mother regarding factors likely to increase risk of transmission e.g. mixed feeding, if not receiving ART	• Risk of transmission is minimised if “exclusive breastfeeding” is practiced.	
	• If not receiving ART, when mother is ready to introduce other food to the baby she should be advised to abruptly wean baby from the breast	• Babies of HIV+ women who are “exclusively breastfed” are not statistically different from those “never breastfed” at six months. However, both these groups are statistically significant from those who are “mixed fed” i.e. given any additional fluids or solids while being breastfed, as this may lead to gastrointestinal injury and disruption of immune barriers	

1. National Health and Medical Research Council (2012) Infant Feeding Guidelines. Canberra: National Health and Medical Research Council.
2. Coutsidis et al, AIDS (2001), 15: 379-387
3. General Health Promotion/ Department of Health UK (2004), HIV and Infant Feeding: Guidance from the UK Chief Medical Officers’ Expert Advisory Group on AIDS, p17.
4. Covadia HM et al, 2007, Mother-to child transmission of HIV-1 infection during exclusive breastfeeding in the first 6 months of life: an intervention cohort study. Lancet March 31; 369: 1107-1116
5. World Health Organisation, Rapid Advice – Use of antiretroviral drugs for treating pregnant women and preventing HIV infection in women, November 2009. www.who.int

Cannabis use and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother smokes cannabis and plans to breastfeed or is breastfeeding **Also referred to as: cannabis, pot, herb, weed, boom, Mary Jane, gangster and chronic*	• Women are advised not to smoke cannabis whilst they continue to breastfeed	• The risks of cannabis use whilst breastfeeding outweigh the benefits to the baby • Cannabis use may make the baby unsettled and disrupt feeding cycles. • There are theoretical concerns regarding the effect of cannabis on the newborn's neurodevelopment.	**Mother:** Avoid/limit cannabis use and continues to breastfeed Mother can make an informed decision re breastfeeding **Baby:** A well, healthy, alert breastfed baby Prevent/decrease baby's exposure to cannabis through breastmilk
	• Offer the woman referral to the Perinatal and Family Drug Health Service if not already engaged	• Intoxication from cannabis use may affect the mother's responsiveness to the infant's needs	
	• Advise mother that cannabis is excreted in breast milk. THC, the main ingredient of cannabis is stored in fat tissue for long periods (weeks to months), is excreted and may accumulate in milk and may also effect milk production as is typically mixed with tobacco.	• Terminal elimination half life approx. 4.3 days (2.6-12.6). Amount of THC in breastmilk is dependent upon the amount of cannabis used. An eightfold increase of THC in breastmilk compared to that measured in maternal serum has been reported one hour following cannabis use	
	• Inform mother that we do not know what harmful effects cannabis may have on baby and remind mother of the short term effects on herself e.g. memory, difficulty with problem-solving, panic attacks.	• If mother chooses to smoke marijuana she should be advised to minimise her intake, smoke after a breastfeed, ensure the presence of a non drug affected carer for baby, be offered support for cessation and advised not to breastfeed if she smokes daily or at dependent levels.	
	• Monitor baby's output and weight gain	• Cannabis has a significant effect on the Hypothalamic-Pituitary-Gonadal (HPG) axis, which inhibits the release of prolactin and may affect milk supply	
Mother smokes cannabis is not willing to limit or avoid cannabis use.	• Refer to Drug and Alcohol Services for support	• To limit or avoid cannabis use.	Mother ceases cannabis use and continues to breastfeed

1. Pharmacy Department, *Drugs and Breastfeeding* 1997-1998, Royal Women's Hospital, Melbourne, p45
2. Hale T & Rowe, H Medication and Mothers' Milk, 2014, 16th Edition, Pharmasoft Medical, USA,

3. Riordon J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA
4. NSW Health (2014) National Clinical Guidelines for the management of drug use during pregnancy, birth and the early developmental years of the newborn

Tobacco Smoking and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother is a smoker	• Refer mother to a suitable program e.g. Quit program	• Women who smoke are less likely to breastfeed and to breastfeed for a shorter time than non-smokers	
	• Encourage the mother to breastfeed and explain the benefits of breastfeeding to both mother and baby	• Breastfeeding for 6 months still has more advantages to the baby than formula feeding	
	• Explain the risks associated with smoking to the baby	• Smoking can decrease milk volume and fat content and depress the milk ejection reflex prior to breastfeeding • Nicotine absorbed from breastmilk is around 5% of the adult daily dose	
	• Advise mother that nicotine patches are an acceptable alternative to smoking	• No untoward effects were noted in the baby in a Nicotine patch study	Mother decides to breastfeed and joins the Quit program
Partner is a smoker	• Explain the risks to the baby associated with passive smoking	• A baby exposed to tobacco smoke has a higher risk of dying from SIDS however breastfeeding is protective • Baby is at greater risk of pneumonia, bronchitis, meningococcal disease, asthma and middle ear infection	
	• Encourage the partner to join a suitable program with the baby's mother (i.e. Quit)	• Reduce risks to baby through provision of a smoke free environment	Partner is supportive of mother and joins a suitable program

1. Riordan J & Wambach K, Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA
2. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett
3. Quit because you can, 2007, NSW Health Tobacco and Health Branch, North Sydney
4. Hale T, Medication and Mother's Milk, 2014, 16th Edition, Pharmasoft Medical, USA

Maternal Opioid Treatment and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother is on prescribed Methadone or Buprenorphine or opioids for chronic pain and wishes to breastfeed	• Women who are stable on Opioid Treatment Program (OTP) should be supported if they choose to breastfeed	• Mother can make informed decision re breastfeeding. Breastmilk methadone levels are low. The safety of buprenorphine is not yet established for breastfeeding. Women on prescribed buprenorphine who choose to breastfeed their infant should be informed of this and supported in their decision. Buprenorphine has poor oral bioavailability and the amount transferred to breastmilk is small.	Mother is stable on Methadone program, therefore, baby's exposure to drugs via breastmilk is minimised, resulting in a non sedated mother breastfeeding her infant
	• Advise mother that methadone / oxycodone, oxycontin is excreted into breastmilk	• Evidence suggests NAS symptoms are reduced in the breastfed infant	
Antenatal opioid treatment doses may require reduction in the postnatal period. Potential risk for maternal sedation	• Ensure mother is monitored by her treating service and or Perinatal and Family Drug Health Service	• Maternal sedation may compromise the safety of the newborn and increase the risk for co-sleeping and possible sleep accident	Well healthy breastfed baby
Theoretical risk of NAS if longer term breastfeeding is abruptly ceased	• Monitor baby for neonatal abstinence syndrome due to maternal OTP	• These symptoms onset typically around 72hours of age in babies whose mothers are stable on OTP.	
	• Educate mother to discuss with C&FHN any plans for weaning	• Reduce risk of NAS onset by slow weaning	Baby weaned with no evidence of NAS

NB * Stable- Mother using only prescribed Methadone

1. Pharmacy Department, *Drugs and Breastfeeding* 1997-1998 Royal Women's Hospital, Melbourne p 103
2. Hale T & Rowe, H Medication and Mothers' Milk, 2014, 16th Edition, Pharmasoft Medical, USA,
3. Riordon J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA, p 175
4. NSW Health (2014) National Clinical Guidelines for the management of drug use during pregnancy, birth and the early developmental years of the newborn

Heroin, or other illicit opiate use and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother uses and /or is dependent on illicit opiates e.g. Heroin, oxycontin and wishes to breastfeed	• Support the mother in her decision to breastfeed and encourage inpatient withdrawal management or maintenance pharmacotherapy (methadone or buprenorphine) in consultation with Perinatal and Family Drug Health • Breastfeeding is not safe with ongoing maternal heroin use	• The desire to breastfeed her infant may be a motivator to accessing treatment for dependency	Mother is stabilised on Opioid Treatment Program or successfully completes inpatient withdrawal management
The infant is at risk of opiate withdrawal (NAS)	• Monitor baby for Neonatal Abstinence Syndrome (NAS) as per protocol	• Heroin rapidly transfers to breastmilk, is not a pure substance and maternal sedation places the infant at risk • NAS symptoms can interrupt breastfeeding	Infant safety, successful breastfeeding
Mother may not use heroin at dependent levels and wishes to breastfeed	• Encourage the mother to have a safety plan e.g. expressing and storing breastmilk in advance. If mother uses heroin during breastfeeding, she must express and discard the EBM for 24 hours. A non-drug affected carer should be available for the infant at all times.	• Reduce the risk to the infant of sedation, harm, or neglect	Mother is able to make an informed decision about her current drug use and breastfeeding

1. Andriske L *Drugs and Breastfeeding* 1997-1998. Pharmacy Department The Royal Womens Hospital Melbourne Australia
2. Hale T & Rowe, H Medication and Mothers' Milk, 2014, 16th Edition, Pharmasoft Medical, USA,
3. Riordon J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA, p 175
4. NSW Health (2014) National clinical guidelines for the management of drug use during pregnancy, birth and the early developmental years of the newborn

Maternal Psycho-stimulant use and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother uses psycho-stimulants e.g., amphetamines, methamphetamines, cocaine or MDMA (Ecstasy)and wishes to breastfeed	• Offer mother assessment by Perinatal and Family Drug health if not already engaged. • If the woman is a regular or dependent user, breastfeeding is not advised.	• Provide opportunity for engagement into treatment • Breastmilk amphetamine levels have been found to be up to 7 times higher than maternal plasma	Maternal abstinence from psychostimulant use
Mother has recently used psycho-stimulants and breastfeeding	• Encourage mother to express and discard her milk for at least 24- 48 hours after last ingestion, have a safety feeding plan in place and a non drug affected carer	• Can cause extreme toxicity in the baby	Mother is able to make an informed decision about her current drug use and breastfeeding

1. Hale T, Medication and Mother's Milk, 2014, 16th Edition, Pharmasoft Medical Publishing
2. NSW Health (2014) National clinical guidelines for the management of drug use during pregnancy, birth and the early developmental years of the newborn

Contraception and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Effective method of contraception that is compatible with breastfeeding	Discussion with mother re methods of contraception available, including: • how they work • when they can be used • benefits/risks • effect on breastfeeding	• 33% of lactating women have had a menstrual period by the end of the third month • almost half will experience some bleeding or spotting between 6-8 weeks • bleeding is unlikely to indicate a return to fertility before 8 weeks	Mother can make informed decision re method of contraception she will use Referral to GP or Family Planning Association for further information Mother avoids pregnancy for as long as she wishes and continues to breastfeed
Use of combined pill	• The combined oral contraceptive pill containing both oestrogen and progestin is not recommended for breastfeeding mothers	• The oestrogen component although unlikely to have a hormonal effect on the baby may significantly decrease milk production	
Mini-pill (also Known as Progestogen-only pill)	• If absolutely necessary it can be commenced from 2-6 weeks postpartum (the longer it can be left the better)	• The dose is quite low. Some women report a slight initial reduction in milk production, but this usually responds to a short term increase in feeding frequency	
Intramuscular medroxyprogesterone acetate (Depo Provera®)	• Should not be considered until milk supply established although its use remains controversial	• The earlier oral contraceptives are started the greater the negative effects on lactation	
Etonogestral Implant (Implanon®)	• Subdermal Implant that is effective for three years. Effects reversible immediately after removal of device (should be inserted 21-28 days postpartum)	• May arrest early milk production i.e. the first 6 weeks • Caution is recommended although changes in milk production are unlikely	
Emergency Contraception (Levonorgestrel method)	• Ideally given within 24-72 hours after unprotected intercourse	• Thought to have minimal effect on milk production	
IUCD- Intrauterine Levonorgestrel (Mirena®)	• Can be inserted from 6 weeks postpartum. Effects reversible immediately after removal of device	• Compatible with breastfeeding	

1. Hale T, Medication and Mother's Milk, 2014, 16th Edition, Pharmasoft Medical Publishing, USA
2. Queenan JT. Contraception and breastfeeding. Clin Obstet Gynecol. 2004;47:734-9. PMID: 15326435
3. World Health Organization. Medical eligibility criteria for contraceptive use, third edition. Geneva: Reproductive Health and Research, World Health Organization. 2004. ISBN 9241562668

Contraception cont - Lactational Amenorrhea (LAM)

Needs and/or Problems	Action	Rationale	Desired Outcome
Identification of women for whom LAM is a viable method of contraception and wish to use it.	• Discussion with mother re methods of contraception available, including LAM	• Mother can make informed decision re choice of contraception	Informed decision made
	• If mother interested in LAM as a method of contraception then information given should include: a) how it works b) when it can be used c) why use it d) benefits e) failure rate	• If the following criteria are met mother has 98% protection against pregnancy with breastfeeding alone: a) The mother remains amenorrhoeic b) The baby is less than 6 months old c) The baby is not receiving any supplementary food d) The baby feeds at night	Mother can be educated in how to use LAM as a method of contraception Mother uses LAM
	• Mother referred to Family Planning NSW: Toll free: 1300 658 886 or GP for further information	• Mother can make informed decision re choice of contraception	Mother is supported if she wishes to use LAM

1. Family Planning NSW, 2008. Health Information Sheet. Natural Family Planning
2. Riordon J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA
3. Brodribb W (Ed), *Breastfeeding Management in Australia*. A reference and study guide. Australian Breastfeeding Association, 2012.p 24, 254.

Ongoing Assessment

Ongoing Monitoring of Baby's Progress

Needs and/or Problems	Action	Rationale	Desired Outcome
Baby's behaviour	• Adequacy of breastfeeding can be assessed by baby's' behaviour, feeding patterns, urine output and bowels as well as weight • Rule out hunger • Assess weight • Support and offer options rather than advice • Options include: rocking, patting, use of pram or sling	• Unexplained crying periods between 1-4 hours per day can occur in 80% of babies with 10-35% of healthy babies crying for a long period regardless of the method of feeding • From 3 weeks to 3 months baby's become more wakeful and unsettled • A young baby needs the comfort of an adult to assist with moving to a more organised state	Parents have a range of options to settle their baby
Bowel Motions	• Frequent runny stools do not mean the baby had diarrhoea • The number of bowel motions decreases between 6 weeks and 3 months. There can be intervals of several days or more between stools	• Typical stools are loose mustard yellow but can sometimes be orange or green	Health professionals and mothers understand the normal bowel motions of a breastfed baby
Urinary Output	• After day 4-5 there should be 6 or more pale odourless nappies over 24 hours	• Adequate urine output is an indicator of adequate breastmilk supply	Baby is well hydrated
Baby's Weight	• Weight is only one tool to determine progress and should be used with clinical assessment • Weight should be assessed over an average of four weeks on the same calibrated scales • Percentile charts should be used as a guide only. Weight is only one tool to determine progress • Breastfed babies have a lower velocity of growth after 2-3 months: when plotted on a growth chart they may appear to be faltering, even if thriving • Only bare weights should be plotted on the growth charts • Normal baby's cross percentiles (to attain their genetic potential) and this should be correlated with length	• Allow baby to regain birth weight by 2 weeks • Approximate weekly weight gain averaged over 4 weeks: - 2 weeks-3 months ---150-200gms - 3-6 months --- 100-150gms - 6-12 months --- 70-90gms	Baby is growing appropriately

Ongoing Monitoring of Baby's Progress cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
Baby's unsettled behaviour	• Increase mothers awareness of baby's tired signs and sleep needs	• Unexplained crying for short periods for 1-4 hours every 24 hours occurs in approximately 80% of babies • It is estimated that 10-35% of babies cry for periods in excess of 4 hours daily with no apparent reason	A more settled baby Parents happy with ability to manage baby's' unsettled behaviour
	• Soothing techniques such as massage, sling wearing, cuddling, feeding, rocking, patting and bathing, soothing sounds.	• Baby's do not have the ability to settle themselves	
	• Rule out Neonatal Abstinence Syndrome (NAS)	• Unsettled behaviour may indicate drug withdrawal including excessive amounts of caffeine.	
Frequent feeding	• Feed as the baby demands • Reassure mother that baby may need to feed frequently to maintain an adequate supply • Ensure positioning and attachment is correct	• It is normal for baby's to feed frequently – some days up to 12 times in a 24 hour period • Breastfeeding works on supply and demand	An appropriate milk supply is established
	• If the baby is spending a long period of inactivity on the first breast, encourage mother to change to the second breast	• Changing sides encourages more frequent let downs which encourages feeding, stimulation and drainage.	
	• Encourage rest between feeds when possible	• Milk production is at its peak when the mother is at rest	
Baby's need for stimulation	• Encourage the parents to be interactive with their baby • Interactive floor play should be encouraged	• Interaction between mother and baby during feeding (i.e. eye contact) assists development of a strong bond and improves baby's neurological development • Baby's are naturally attracted to faces • Baby's need appropriate stimulation to enhance brain development and attachment as well as develop gross motor, visual and language skills	The baby is in an environment that is sensitive to his needs

1. Food for Health Incorporating the Infant Feeding Guidelines for Health Workers, 2003, National Health & Medical Research Council p 343-348
2. Cadwell, Turner-Maffei, O'Connor & Blair, *Maternal Assessment for Breastfeeding and Human Lactation*, 2002, Jones and Bartlett
3. Gervai, J. Environmental and genetic influences on early attachment. *Child and Adolescent Psychiatry and Mental Health* 2009, 3:25

Paediatric Ward

Flowchart for The Breastfeeding Mother/Baby

- Bare weigh baby as soon as possible after admission
- Is the baby **exclusively** breastfed?

- Calculate baby's expected weight gain (this will give you a good idea of mother's milk supply)
- Observe baby feeding at the breast and note the following:
  i. Breast fullness prior to feed
  ii. Correct positioning and attachment
  iii. Baby's ability to suck and transfer milk
  iv. Baby's contentment post feed
  v. Baby's output

If baby is feeding and observations are normal:

- Encourage mother to continue her normal feeding pattern and offer support as required (pump is not needed)

NB. If the baby is unwell the feeds may be shorter and more frequent

If baby is not feeding well:

- Offer both breasts at each feed
- Assist with latching as required
- Express after each feed and offer baby any EBM

If baby is unable to feed:

- Work out baby's fluid requirement on 8 feeds per day
- Encourage mother to express 3rd hourly
- Offer baby EBM as required

Allocate an electric breastpump to the mother and explain the following according to her situation:

i. How the pump works and the frequency and duration of use
ii. How to clean and sterilise the equipment
iii. How to collect and store the breastmilk
iv. Document in the notes once this has been explained

If mother's milk supply is low:

i. Express after each feed for extra stimulation
ii. Refer to Lactation Staff if available.
iii. Consider recommending Motilium® to increase milk supply
iv. Judicial use of formula if considered necessary
v. Refer to Child and Family Health on discharge

Dietary Considerations when Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
For the mother who wants to meet all her dietary needs	• Advise on Dietary Guidelines for breastfeeding mothers from the Australian Dietary Guidelines. Daily: - 7 ½ serves vegetables and legumes/beans - 2 serves of fruit - 9 serves of grain (cereal) foods (mostly wholegrain and/or high cereal fibre varieties) - 2 ½ serves of lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans - 2 ½ serves of milk, yoghurt, cheese and/or alternatives (mostly reduced fat)	• A fully breastfeeding woman will require an extra 2,000-2,100 kJ/day in the first 6 months but this amount will depend on the mother's level of milk production and changes in physical activity • Lactation increases the recommended dietary intakes. Most nutrient needs increase by a factor of about 50%	Mother to maintain normal body levels of nutrients with particular attention to "at-risk" nutrients – iron, zinc and vitamin B12
	• Additional Iodine 150 µg/day via supplement	• NHMRC recommends that breastfeeding women also take an iodine supplement because breast fed infants are completely dependent on milk as a source of iodine and need around 90 to 100µg of iodine per day	
	• Other nutrient supplementation should be advised dependant on blood test results of mother.	• Nutrient deficiencies may be supplemented by over the counter pregnancy/breastfeeding supplements, or specific supplements (e.g. Vitamin D) dependant on identified need.	
	• Ensure adequate hydration, an extra 750mL-1000mL water is required daily	• Breastfeeding women have an increased water requirement due to fluid lost through breast milk	

Dietary Considerations when Breastfeeding cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
For the mother who follows a restricted diet Some examples: Vegetarians Women who may be dieting during lactation Have a history of persistent dieting Have medical dietary requirements (celiac, allergies, chrohns etc) History of bariatric surgery Other women at risk of lactating issues: Obese women	• Ascertain type of restricted diet: • Ensure normal blood iron and zinc levels are maintained • Women with a history of bariatric surgery are at risk of nutrient deficiencies due to low intake calories and/or malabsorption. depending on the type of procedure • Obesity is associated with higher risk of deficiency in Vitamin D, Iron, several group B vitamins and trace minerals.	• As iron levels may be low after giving birth, it is essential to ensure a mother's iron intake is meeting her requirements. Low iron levels can increase fatigue and may affect milk supply. • Identifying type of diet will allow appropriate recommendation of iron containing foods.	Mother and her baby are suitably nourished
Semi-vegetarian diet – usually avoids only red meat but has fish/chicken/eggs and dairy foods Ovo-lacto and lacto vegetarian diet – avoids all flesh foods (meats/fish/poultry) but have dairy foods +\- eggs.	• Encourage regular consumption of iron-containing foods such as nuts, legumes, seeds and wholegrain cereal, eaten with a fruit/vegetable high in Vitamin C • Avoid drinking tea/coffee with meals	• Vegetarian diets contain non-haeme iron, which is not as easily absorbed as haeme-iron from animal foods. Non-haeme iron absorption is increased if a high vitamin C food is eaten at the same meal. Tea/coffee interfere with iron absorption	

1. Angela V Saunders, Winston J Craig, Surinder K Baines and Jennifer S Posen. Iron and vegetarian diets. MJA Open 2012; 1 Suppl 2: 11-16.
2. National health and Medical Research Council (2013) Australian Dietary Guidelines. Canberra, National Health and Medical Research Council.
3. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett p324
4. Cecilia Jevitt, CNM, PhD; Ivonne Hernandez, MS, RN, IBLC; Maureen Groër, RN, PhD. Lactation Complicated by Overweight and Obesity: Supporting the Mother and Newborn. J Midwifery Women's Health. 2007;52(6):606-613
5. Maternal Obesity, 2012. Matthew W. Gillman, Lucilla Poston
6. Jeffrey I. Mechanick, M.D.1, et al. Clinical Practice Guidelines for the Peri operative Nutritional, Metabolic, and Nonsurgical Support of the Bariatric Surgery Patient—2013 Update: Cosponsored by American Association of Clinical Endocrinologists, The Obesity Society, and American Society for Metabolic & Bariatric Surgery. Obesity March 2013 21 (S1).

Dietary Considerations cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
For the mother who follows a **vegan** diet (vegan and strict macrobiotic diets – avoid all animal foods) maybe at risk of Vitamin B_{12} deficiency	• Check blood vitamin B12 status • Recommend vitamin B12 fortified soy drinks and supplements be used in consultation with GP	• Long term vegan mothers produce breastmilk containing very low or no, vitamin B12. • Therefore vitamin B12 supplemented foods or B12 vitamin supplements are recommended for vegans	Mother and her baby are suitably nourished
	• Baby likely to need vitamin B12 supplements	• Babies without adequate vitamin B12 rapidly develop neurological problems. Plants do not contain active vitamin B12 and can only provide this vitamin if contaminated with vitamin B12 synthesising bacteria. As the food supply in Western countries is sold under strict hygiene standards, plants to not provide a reliable source of vitamin B12.	
	• Ensure enough energy (kJ) from diet by use of high fat foods like nuts, vegetable oils and ground seeds	• Vegan diets are high in fibre and low in fat and rapid weight loss during lactation will decrease milk production therefore mothers energy needs must be met	
	• Ensure normal blood iron and zinc levels are maintained. Encourage iron-containing foods as per ovo-lacto vegetarians. Ensure adequate calcium intake: e.g. from calcium-fortified soy drinks, tofu, almonds, sesame seeds and tahini.	• Vegan diets exclude many dietary sources of iron, zinc and calcium. Inclusion of vegan sources is essential to ensure adequate dietary intakes of these nutrients.	
	• Refer to Dietician if on a vegetarian, vegan or any variable diet.	• Whilst the composition of the breastmilk does not vary greatly with a change in the mother's diet, an inadequate diet may lower the mother's nutrient stores	

1. National health and Medical Research Council (2013) Australian Dietary Guidelines. Canberra, National Health and Medical Research Council.
2. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett p324
3. Specker B Nutritional Concerns of Lactating Women consuming Vegetarian Diets Am J Clin Nutr 1994; 59(suppl) 1182S-1186S American Dietetic Association
4. Graham SM, Arvela OM and Wise GA Long Term Neurological Consequences of Nutritional Vitamin B12 Deficiency in infants J Pediatr 1992; 121:710-714
5. Herbert V. Staging vitamin B12 (cobalamin) status in vegetarians Am J Clin Nutr 1994; 59 (suppl): 1213S – 1222S

6. Craig, WJ Iron Status of vegetarians. Am J Clin Nutr 1994; 59(supp): 1233S-1237S

Dietary Considerations cont…

Needs and/or Problems	Action	Rationale	Desired Outcome
For the mother who wants to lose weight	Ascertain pre-pregnancy (usual) weight and monitor current weight and any changes. Aim for <2kg weight loss per month by: • Regular moderate exercise (e.g. walking) • Avoiding high fat/high sugar foods that have a low nutritional content • Encourage fresh fruits and vegetables, low fat dairy foods • Wholemeal cereal foods and lean meats/fish, chicken and legumes	• Crash diets with rapid weight loss increases tiredness and affects milk supply. Rapid weight loss also increases the level of environmental contaminants and trans fatty acids in breastmilk • Modest regular weight loss (2kg per month) does not affect lactational performance	Aim for mother to return to healthy weight range of BMI = 20-25 BMI = [weight(kg)] ÷ [height(m)]^2 For example: The healthy weight range for a 165cm tall woman is 54-68kg
	• Encourage continued breastfeeding past 6 months	• Continued lactation into second six months appears to enhance weight loss	Mother continues to breastfeed past 6 months
For the mother who wants to commence/restart an exercise regime	Advise mother to seek normal medical clearance. Also advise the following: • Ascertain pre-pregnancy weight and monitor current weight and any weight changes • Advice on maintaining joint stability • Need to increase exercise gradually and to always "warm up" • Need to maintain hydration/fluid intake	• Rapid weight loss impairs lactational performance • Exercise, including vigorous exercise, does not seem to affect breastmilk production/lactation performance – as long as energy needs are being met	Improved cardiovascular fitness and body tone, while maintaining weight or while slowly losing <2kg per month
	• Need for adequate breast support	• Increasing breast size can make exercise uncomfortable, therefore good breast support is essential	

1. American Dietetic Association. *Manual of Clinical Dietetics*. ADA, Chicago; 1988
2. Chappell JE, Clandinin MT and Kearney-Volpe C *Trans fatty acids in human milk lipids: influence of maternal diet and weight loss* Am J Clin Nutr 1985; 42: 49-56
3. Stevens MF, Ebel GF and Psaila-Savona P *Organochloride pesticides in Western Australia Nursing Mothers*. MJA 1993; 158: 238-241
4. Quinsey PM, Donohue DC, Cumming FJ, Ahokas JT *The importance of measured intake in assessing exposure of breast-fed infants to organochlorides*. Eur.J.Clin. Nutr 1996; 50:438442
5. Butte NF, Garza C, Stuff JE, Smith EO, Nichols BL. *Effect of maternal diet and body composition on lactational peformance*. Am J Clin.Nutr. 1984; 39:296-306
6. Dewey KG, Lovelady CA, Nommsen-Rivers LA, McCrory MA, Lonnerdal B. *Randomised study of the effects of aerobic exercise by lactating women on breastmilk volume and composition.* NEJM 1994; 330(7): 449-453
7. Dusdieker LB, Hemmingway DL, Stumbo PJ. *Is milk production impaired by dieting during lactation*? Am J. Clin. Nutr 1994: 59:833-840
8. Dewey KG, Heinig MJ, Mommsen LA. *Maternal Weight loss patterns during prolonged lactation* Am.Clin. Nutr. 1993; 58:162-166
9. Dewey KG, Lovelady CA, Nommsen-Rivers LA, McCrory MA, Lonnerdal B. *Randomised study of the effects of aerobic exercise by lactating women on breastmilk volume and composition*. NEJM 1994; 330(7): 49-453
10. Prentice A. *should lactating women exercise?* Nutrition Reviews 1994; 52(10): 358-360

11. Clapp JF, Little KD. *The interaction between regular exercise and selected aspects of women's health*. Am J Obstet. Gynaecol. 1995; 173:2-9

Vitamin D and Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother is suspected to be at risk of Vitamin D deficiency placing her baby at risk of rickets At risk factors: • Dark-skinned • Inner city dwelling • Clothing deters skin exposure • Housebound • Chronic illness that requires sun avoidance • Take medicines that cause Vitamin D to break down (e.g. some epilepsy medicines)	• Assess Mother's Vitamin D levels and supplement as required. Currently 1000 IU/day is the recommendation if mothers levels of Vitamin D are low	• The usual supplement dose of Vitamin D is 1000IU per day when low levels (<50nmol/l) are detected through blood tests, but may be higher in severe deficiency. • The dosage varies so the correct dose for you should be checked with your doctor. • Increased Vitamin D intake results in increased levels in breastmilk	Risk of Vitamin D deficiency is corrected and baby continues to breastfeed
	• Review maternal diet to dietary sources of Vitamin D such as milk, butter, eggs & oily fish	• Only 10% of vitamin D comes from food sources: mainly oily fish (such as salmon and mackerel), eggs and meat. Some margarines and milk have vitamin D added.	
	• Encourage normal exposure of mother and baby to the sun i.e. arms and legs	• Vitamin D is produced mainly by our skin when it is exposed to sunlight. Overall, it is advisable for sun exposure in summer to be avoided between 11am and 3pm and to always use sunscreen whenever the UV index is above 3.	
	• Fully breastfed babies may also require Vitamin D supplementation	• Vitamin D is necessary for calcium absorption and breastmilk has very little Vitamin D (~25 IU/L)	
	• A blood test may be done to check your baby's vitamin D level and determine if supplementation is required. • Supplementation dosage should be confirmed with a doctor but the usual recommended dose is 400IU daily.	• If a vitamin D deficiency is not fully treated during pregnancy, baby will probably require vitamin D drops by mouth after birth. This is particularly so, if baby has 'at risk factors' for Vitamin D deficiency	

1. National health and Medical Research Council (2013) Australian Dietary Guidelines. Canberra, National Health and Medical Research Council.
2. Riordan J & Wambach K, Breastfeeding and Human Lactation, 2014, 5th edition, Jones & Bartlett, USA
3. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013). Jones and Bartlett p325

Alcohol Considerations when Breastfeeding

Needs and/or Problems	Action	Rationale	Desired Outcome
For the mother who wishes to consume alcohol	• Advise mother that the safest option is to avoid alcohol whilst breastfeeding • Particularly avoid alcohol in the first 4 weeks and while breastfeeding is being established	• Alcohol enters the breastmilk and may persist for several hours after maternal consumption • Alcohol may harm the developing baby if ingested via the breastmilk	
	• If mother chooses to drink alcohol- advise her to limit alcohol intake to no more than 2 standard drinks per day and only after a breastfeed at a time when she is unlikely to breastfeed in the next couple of hours.	• Large quantities of alcohol decrease the volume of breastmilk produced by interfering with the let down reflex. An intake of 10 to 20 gms in a day is considered safe (<2 standard drinks) and may help aid the let down reflex. Refer to the ABA handout 'Alcohol and breastfeeding: a guide for mothers' • Drinking >2 standard drinks per day may affect the baby's psychomotor development and disrupt their sleep – wake behavioural patterns • Alcohol may make the baby drowsy or unsettled and reduce the intake of breastmilk	Low, social alcohol intake for the mother if she wishes
	• It is best to consume the alcoholic drink just after a feed when the baby will not be feeding again for a few hours • Consider expressing in advance if the mother intends to drink alcohol and express and discard her milk when drinking alcohol	• Alcohol is transferred through the breastmilk at a level similar, or just lower than, that in the mother's blood. Consumption of alcohol just after the baby has been breastfed (and, therefore, a few hours before the next feed) ensures that the breastmilk the baby consumes at the next feed will contain less/no alcohol	Nil intake of alcohol for the baby

1. Brodribb W (Ed), *Breastfeeding Management in Australia*. A reference and study guide. Australian Breastfeeding Association, 2003
2. Mennella JA, Beauchamp GK. *The transfer of alcohol to human milk. Effects on flavour and the infant's behaviour*. NEJM 1991: 325(14):981-985
3. Australian Government- Department of Health and Ageing, New Guidelines for Alcohol Consumption, 2009, www.alcohol.gov.au
4. National health and Medical Research Council (2013) Australian Dietary Guidelines. Canberra, National Health and Medical Research Council.
5. Australian Breastfeeding Association (Accessed Oct 2015) Alcohol and breastfeeding: a guide for mothers https://www.breastfeeding.asn.au

Caffeine Consideration during Lactation

Needs and/or Problems	Action	Rationale	Desired Outcome
For the mother who wishes to consume caffeine containing food/drinks	• The recommended limit in Australia is a maximum of 200mg caffeine per day during pregnancy and breastfeeding. This would be equivalent to 1 cup of strong espresso style coffee, 3 cups of instant coffee, 4 cups of medium strength tea, 4 cups of cocoa or hot chocolate or 4 cans of cola. • If caffeinated drinks are consumed, encourage use of decaffeinated options.	• Caffeine is excreted in breastmilk in low levels and reaches a maximum concentration about one hour after consumption. Large quantities may accumulate in the baby and result in jittery, wakeful baby and may decrease the baby's absorption of iron	Low to moderate intake of caffeine-containing drinks and foods
	• Avoid sudden changes in the caffeine intake	• Sudden changes in caffeine intake are more likely to have a noticeable effect on the baby, as the body becomes accustomed to a certain level of intake	Minimal exposure of caffeine to baby

1. Nehlig A, Debry G. *Consequences on the newborn of chronic maternal consumption of coffee during gestation and lactation: a review* J Am Coll. Nutr. 1994; 13(1):6-21
2. Hale T & Rowe, H Medication and Mothers' Milk, 2014, 16th Edition, Pharmasoft Medical, USA,
3. National health and Medical Research Council (2013) Australian Dietary Guidelines. Canberra, National Health and Medical Research Council.

Returning to Work

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother planning to return to work	• Educate mother on her rights as a working breastfeeding mother. Encourage mothers to discuss combining breastfeeding and work with their employer • Advise mothers they are protected by the Sex Discrimination Act and the NSW Anti discrimination Act.	• A well informed mother can negotiate her rights more effectively with her employer	Baby continues to receive breastmilk when mother is in the workplace.
Prevention of breastfeeding problems associated with return to work	• Discuss various options available to mother • Replacing breastfeeds during work hours with EBM or replacing breastfeeds during work hours with infant formula • Replacing breastfeeds during working hours with solid food when the baby is 6 months or older.	• Mother is educated on how to replace breastfeeds with other options whilst at work	No breast complications arise Sufficient milk is expressed for the baby while mother is at work Mother is able to recognise any changes in breasts
	• Education re expressing and storing	• Ensures safe management of breastmilk	
	• If offering EBM and supply adequate, express at time baby would normally be fed	• The rate of milk production matches the amount removed from the breast	
	• Monitor breasts for any signs of lumps or discomfort	• Close monitoring of breasts while reducing number of feeds or expressions reduces the likelihood of problems	
	• Weaning – if weaning or replacing breastfeeds with formula, slowly reduce the number of breastfeeds	• Slow weaning decreases the possibility of engorgement, blocked ducts or mastitis	
Separation anxiety /distress	Ensure the following: • Support of partner and family • Adequate child minding facilities • Baby comfortable with alternative feeding method e.g. bottle, cup	• Mother will be more relaxed with work arrangements • Mother knows that baby is able to feed while she is absent	Mother is able to maintain desired milk volume and has full support with working arrangements

1. Australian Breastfeeding Association, Breastfeeding, Women and Work, Booklet Series. 2002. Victoria
2. Riordon J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA

Breastfeeding after General Anaesthetic

Needs and/or Problems	Action	Rationale	Desired Outcome
Breastfeeding mother requires General Anaesthetic	• See "Medication and Breastfeeding" for basic information to support mother to breastfeed as soon as possible post anaesthetic or contact Mothersafe during office hours.	• Interrupting breastfeeding for long periods is discomforting to the mother, difficult for the baby and may permanently interrupt breastfeeding.	
	• Encourage mothers to breastfeed when they are awake and alert.	• Many anaesthetic medications either have brief half-lives and/or rapid redistribution from the plasma compartment to other remote compartments eg muscle. This reduces the overall degree of exposure to the baby • Some data is available on most medications used in anaesthetics and if exposure to the baby via milk is brief this does not allow sufficient time for clinically relevant levels to build up. Drugs enter milk and in most cases exit milk as a function of the mother's plasma level	
Baby is young or premature	• The age of the baby is variable and must be considered, as young or premature babies may be more susceptible to medication transfer	• The intracellular junctions of the alveolar cells have wide gaps in the first four days post partum and for a longer period if the baby was premature. These gaps permit medications to penetrate breastmilk more readily.	There is minimal interruption to breastfeeding

1. Hale T & Rowe, H Medication and Mothers' Milk, 2014, 16th Edition, Pharmasoft Medical, USA,
2. Hale T. Anaesthetic Medications in Breastfeeding Mothers, 1999, J Hum Lact 15(3)
3. Academy of Breastfeeding Medicine Protocol #15 Analgesia and Anaesthesia for the breastfeeding woman, revised 2012 http://www.bfmed.org/Media/Files/Protocols/Protocol_15_revised_2012.pdf

Breastfeeding and Radiological Procedures

Needs and/or Problems	Action	Rationale	Desired Outcome
Mother requires a diagnostic procedure that requires the administration of a substance or medication	• Identify the contrast to be used Use appropriate resource to evaluate transference into breastmilk and the degree of exposure to the baby. For example: - LactMed database - Medications and Mothers Milk - Or phone Mothersafe: 9382 6539 (Sydney metropolitan) 1800 647848 (Non metropolitan area) • Mother may need to express and discard during interruption to maintain milk supply • Provide mother with the appropriate information so that she may make an informed decision	• Manufacturers' inserts discourage breastfeeding for fear of litigation not necessarily for well-founded pharmacological reasons • Should be weighed against the risk of interrupting breastfeeding and the potential risks to both mother and baby particularly if baby is "at risk" e.g. premature • Interrupt breastfeeding for 5-7 radioactive half-lives	• Mother makes an informed decision • Ideally baby continues to breastfeed
Procedure requires the use of a Radio-opaque agent: • Gadolinium-based e.g. MRI • Iodine-containing contrast medium (ICCM) e.g. CT scan, intravenous pyelogram	• No interruption to breastfeeding[4] • No interruption to breastfeeding[5]	• Excreted into breastmilk in extremely small amounts usually less than 0.04% • MRI is considered a safe procedure for a baby • Less than 1/1000th of the ICCM dose gets into the breastmilk and it has poor bio-availability to the baby	• Baby continues to breastfeed
Thyroid scan – Radioactive I^{131}	• Breastfeeding should be discontinued.	• Enhanced risk of thyroid cancer in infant	• Baby is not exposed to harmful radioactive substance

1. Newman J, 2007, *Breastfeeding and radiologic procedures*, Can Fam Physician, Vol 53(4) April
2. Hale T & Rowe, H Medication and Mothers' Milk, 2014, 16th Edition, Pharmasoft Medical, USA
3. ILCA Core Curriculum for Lactation Consultant Practice- 3rd Ed. (2013) . Jones and Bartlett p447
4. American College of Radilogy Committee on Drugs and Contrast Media. Administration of contrast media to breastfeeding mothers. In, ACR manual on contrast media. 2012
5. Royal Australian and New Zealand College of Radiologists *Iodine-Containing Contrast Medium Inside Radiology*, 2009
6. LactMed Database http://toxnet.nln.nih.gov/cgi-binn/sis/search

Weaning

Needs and/or Problems	Action	Rationale	Desired Outcome
Request/desire to wean	• Information and guidance provided from a Health Professional regarding weaning choices	• Mother can make informed decision on which type of weaning she will choose.	
	• Abrupt – Immediate cessation of breastfeeding. Gentle expressing for comfort only, using hand or breast pump gradually decreasing each day.	• Not recommended as a first option as this method results in painful oedema.	
	• Gradual – Reducing the number of breastfeeds given to baby over a chosen period of time.	• Method of choice as this allows fat tissue to replace milk-providing tissue over a longer period of time.	Effective weaning with minimal discomfort for mother and baby
Breast discomfort	• Wear firm supportive bra • Analgesia (paracetamol if needed) • Apply cold compress • Observe for blocked ducts • Express for comfort only if abrupt weaning • Breastfeed and drain breast if gradual weaning	• Prevent complications e.g. Mastitis (breast infection)	Relieve discomfort
Breast infection/mastitis present	• Commence a broad spectrum antibiotic for 10-14 days • Paracetamol as needed • Discuss diet and rest • If gradually weaning do not reduce breast feeds further until infection cleared	• To prevent reoccurrence	Improvement in signs and symptoms within a few days
Support	• Offer support and counselling • Provide information regarding community support services e.g. 24 hour parents help line	• To reduce the sense of loss and guilt	Mother comfortable with her decision
Use of medication to suppress lactation urgently e.g. mother requires cancer treatment or death of infant	• Prescribe appropriate medication e.g. Dostinex • Advise mother of side effects e.g. dizziness, headache • No expressing • Good breast support	• Quicker resolution of milk secretion • Allows mother to make an informed choice	Effective suppression with minimal discomfort to allow other treatment to take place

1. Barker R, Baby Love; *Everything You Need to Know About Your New Baby*, 1999, Pan MacMillan, Australia
2. Lauwers J & Woessner C, *Counselling The Nursing Mother*, 1990 Avery Publishing Group Inc. USA, p226-290
3. Australian Breastfeeding Association, *Weaning*, Booklet Series, 2009, Victoria.
4. Riordon J & Wambach K, *Breastfeeding and Human Lactation*, 2014, 5th edition, Jones & Bartlett, USA

Breastfeeding a Baby in Neonatal Nursery

(Breastfeeding a Preterm Infant)

Underlying concepts

Breastfeeding is universally accepted as the normal method of feeding infants. Additionally the nutritional and immunological superiority of breast milk and risks associated with formula use is well documented in the literature.

This guideline has been developed to protect, support and promote breastfeeding in the Neonatal Intensive Care Unit (NICU) and Special Care Nursery (SCN). The aim being to assist health professionals in providing consistent breastfeeding support on current evidence.

The principles of breastfeeding that apply to healthy term infants may not necessarily apply to the infants in the NICU. Mothers who wish to breastfeed in the NICU setting face many barriers, therefore management strategies must be individualised for each infant. Each infant and family is unique and should have a feeding plan that includes the family's goals and values, and is based on the mothers and infants needs and individual capabilities. Frequent reassessment and revision of the feeding plan as needs change is optimal.

Summary

Breastfeeding the preterm infant begins with early initiation of breast expression and progresses through the following stages:

1. Expression and storage of breast milk
2. Early application of breast milk to oral mucosa of infant's unable to suck at the breast (also called immune supportive oral care (ISOC) in some areas)
3. Beginning enteral feeding
4. Skin to skin, breast licks and non nutritive sucking at the breast.
5. Nutritive sucking with supplementary nasogastric(NG) feeds
6. Fully breastfeeding

Breastmilk Expression

Mothers separated from their infants should be expressed ideally within 1 hour of birth and definitely within 6 hours of birth, to optimise the breast sustained response to produce breastmilk. In the first few hours after birth hand expressing is often the only way to obtain those first essential drops of breastmilk.

Hand expressing should be encouraged every 3 hours in the first few days. It is an acquired skill all mothers should be taught, it may be uncomfortable at first but becomes easier as mothers become more experienced.

Electric Breast Pump

The electric breast pumps available in hospital can be used soon after birth. Although the pump will not usually remove milk from the breast in the first few days, it will stimulate the breast until milk volume increases usually between days 3-5.

Electric breast pumps are generally more effective once milk volume has increased.

Postnatal/NICU staff will provide expressing mothers with an expressing kit and instruction regarding its use with the Electric breast pump.

Mothers should also be instructed on correct cleaning and storing procedure for their kit.

Cleaning breast expressing equipment

- Kits used in NICU/SCN are for single patient use.
- Wash shield and valve in hot soapy water and rinse well
- Tubing does not need to be washed.
- Use a paper towel to dry the kit and leave to air dry in the container provided
- Label the container with infants Addressograph label.
- Kits should be changed weekly
- After using the pumps in the hospital, mothers should be asked to wipe the pumps over with an environmental cleaning wipe, to be left clean and free of spills for next mother.

Wright, A. & Faraday, J. (2014) Tips on Successful Expressing- NICU Liverpool. Booklet SWSLHD
Arnold DW : Human Milk in the NICU Policy into Practice 2010 Jones and Bartlett Boston

Immune Supportive Oral Care (ISOC)

It is well established that breastmilk contains defence factors that include antimicrobial agents, anti inflammatory factors, immunomodulators and leukocytes. These protective immune factors coat the gastrointestinal and upper respiratory tract preventing invasion of mucus membranes by respiratory and enteric pathogens.

Application of fresh breastmilk to infant's oral mucosa colonises infant with maternal bacteria.

Definitions:

Immune Supportive Oral Care (ISOC) colstrum/breastmilk (fresh, never frozen, unfortified) is coated on the insides of the cheeks bilaterally with the swab, and absorbed into the mucous membranes or drops placed directly into the mouth.

Colostrum: The early milk produced in the first few days after birth when the tight junctures in the mammary epithelium are open. Colostrum contains large amounts of antibodies to protect the newborn against disease as well being lower in fat and higher in protein than mature milk.

Breast Milk: Breast Milk expressed by the infants own mother (donor milk is not to be used for ISOC)

Procedure:

Every infant who is not feeding by mouth will receive ISOC, unless breastmilk is contraindicated. NBM for Necrotizing Entercolitis (NEC) is not a contraindication.

Optimal benefit is achieved by application every 2-3 hours. Otherwise apply during infants cares, every 4-6 hours

1. Mount Sinai Hospital Oral Immune therapy procedure 2012

Preterm Infant Readiness to Suck, Swallow, Breath

The infant's readiness is an important part of establishing successful breastfeeding. Breastfeeding is a learned behaviour for mother and infant, and will improve with practice. It is an interactive process between the mother and her infant. Infant readiness must be determined individually using these criteria.

- **Infant behaviour:** observe for hand to mouth and rooting activity. Maturation of the nutritive sucking response occurs gradually, as infant become increasingly competent at latching on to the breast, organising themselves and engaging in efficient sucking.

- **Skin to skin contact (kangaroo care):** is to be encouraged with all infants (even those of mothers who wish to artificially feed). During this contact the infant may display feeding behaviour and can be encouraged to the breast to practice non-nutritive sucking.

- **Gestational age:** when the infant and the mother are able; often around 30 weeks gestation, non nutritive sucking should be initiated at the breast. Some infants, if stable, can start earlier. Effective suck swallow breath co-ordination usually occurs between 32-34 weeks corrected age.

- **Physiological stability:** assess for the stability of the autonomic system i.e. absence of tachypnoea, pallor, mottling, frequent apnoea, bradycardia, desaturation or temperature instability.

- **Sleep/wake states:** the quiet alert state is optimal for feeding time and when the infant is most responsive. This will enhance feeding success and allow for optimal parent-infant interaction.

- Remember to advise mothers that preterm infants behave differently from term infants at the breast. It is normal development for these babies to come off and on the breast, as well as having short sucking bursts with rest periods. This will improve with age and practice.

1. Nyqvist KH . Early attainment of breastfeeding competence in very premature infants, Acta Paediatr 2008;97:776-81
2. Genna CW, Supporting sucking Skills in breastfeeding infants 2nd edition 2013 Ch 7 pg 171-194
3. Mt Sinai Hospital Toronto: Breastfeeding in the NICU guidelines 2011

4. Kaleidoscope the Children's Health Network Guideline: Enteral Feeding – Initiation, Progression and Methods 2013

How to assist a mother to breastfeed the preterm infant

Preparation

It is important to have a comfortable environment for the mother and her infant

- Provide a screen for privacy if desired
- Provide a comfortable upright chair and footstool (if possible) for the mother's comfort, mother's feet should be **flat** on the floor or a foot stool.
- Continue to encourage skin to skin contact as this will encourage infants natural feeding behaviours
- Provide pillows to position infant at the level of the breast and for the mother's comfort

Positioning

The football or cross cradle hold (modified cradle hold) has been identified to be the best for supporting the preterm infant.

The position should focus on supporting the head and torso more completely than is usually required for the term infant. The head of the preterm infant is heavy in relation to the weak musculature of the neck.

The infant's head must remain in line with the torso and hips, as turning the head affects swallowing and may be tiring for the small preterm infant.

Cross Cradle Hold

Football Hold

The football position encourages eye contact, better visualization of the tongue, this position allows for good head control and avoids pressure on the mother's abdomen, particularly post caesarean birth.

Cross cradle position encourages good head control and provides ease in bringing infant to breast

Attachment

Obtaining a latch with a preterm infant can be more challenging than with a full term infant, often taking many attempts. Latching becomes easier with increasing gestational maturity.

The latch may be more difficult for the preterm infant, as the mouth is small and the infant may generate lower intra oral pressures.

The principles of the latch are the same as for the term infant. Breast preparation such as massaging and hand expression of a few drops of milk may be helpful when initiating a feed.

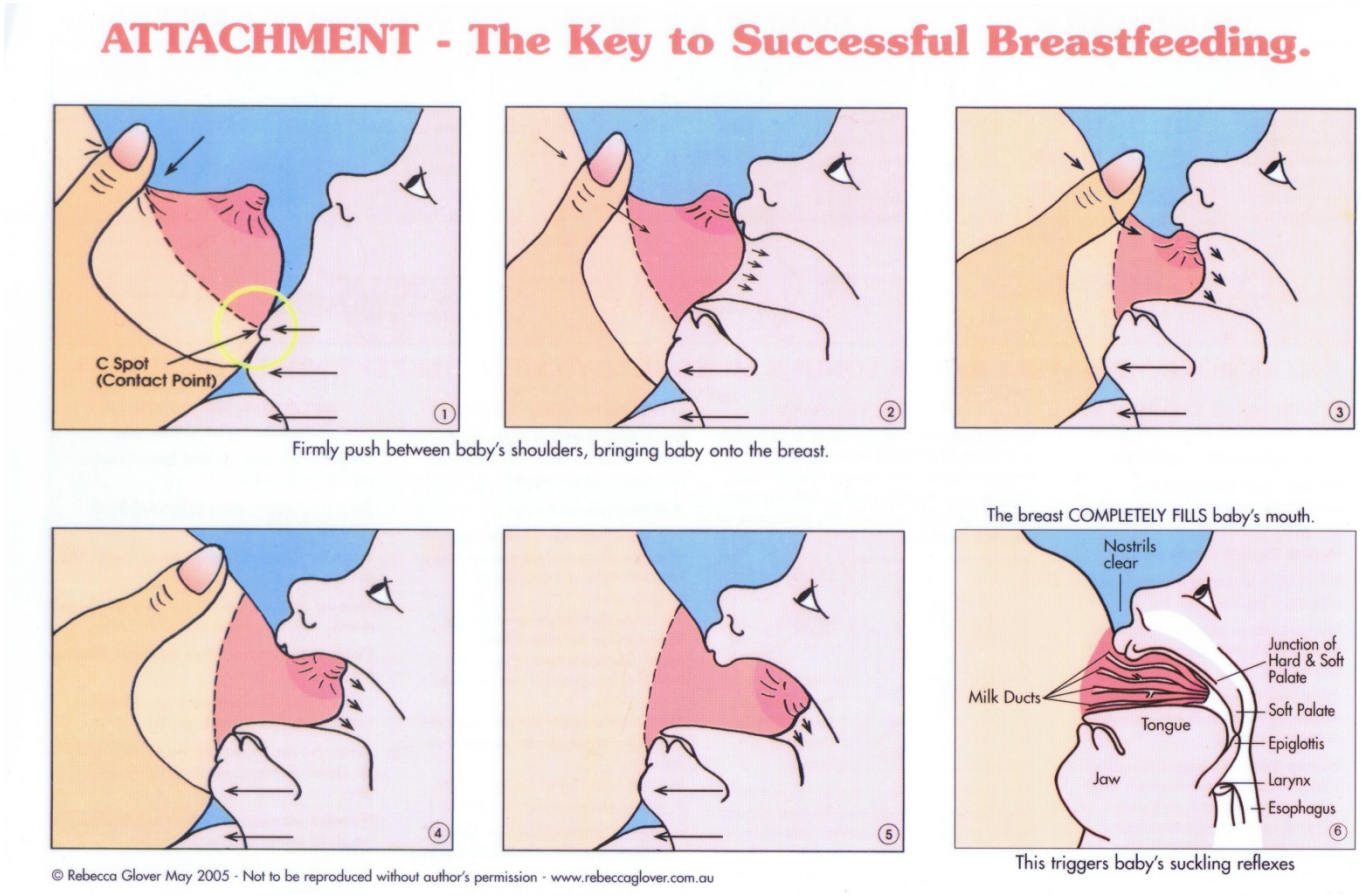
Shaping the breast may assist infant to latch more effectively.

How to assist a mother to breastfeed the preterm infant (cont)

Principles of a deep asymmetrical latch:

- Before latching the infant should be positioned:
  - with body and shoulders stabilised against the mothers body and breast.
  - with chin and mouth lifted up ‘reaching’ for the nipple, head tilted back.
  - with 'nose to nipple’ and the infants chin and lips in touch with the breast below the nipple. *This gives the infant the necessary sensory stimuli for the rooting, head righting and gaping reflexes required to attach deeply.*
- To latch the infants mouth is open wide enough (fully extended) to take as much areola as possible below the nipple
- For a deep asymmetrical latch the infant will take more areola below the nipple than above the nipple

A premature baby needs all the help they can get from good positioning and breast mouth alignment so they can use their limited energy for the main event - latching deeply, which nobody else can do for them.



Non Nutritive Sucking in the Preterm Infant

Non-nutritive sucking at the breast, refers to sucking activity when minimal breast milk is transferred to the infant

It is advised that first attempts at breastfeeding should be commenced with the mother's breasts previously expressed, particularly if infant is on CPAP or high flow Oxygen therapy. If the mother has an ample supply, a strong letdown may lead to an apnea or bradycardia, especially if the infant's feeding skills are only just developing. This can, in turn, lead to anxiety in the breast feeding mother. The aim is to promote a positive experience for mother and infant.

Steps to follow:

- Mother can manually express small amounts of EBM to stimulate the infant's interest.
- The infant may lick and sniff the breast as part of learning to breastfeed (breast licks)
- Can be characterised by a repetitive pattern of irregular sucking bursts and pauses
- The tube feed can be infusing during the sucking period. This may help the infant associate sucking with satisfying hunger

Allow 10-15min of non nutritive sucking before starting the tube feed. Do not delay a feeding during non nutritive sucking sessions beyond the 10-15 minutes - this is to ensure infant is receiving enough calories to tolerate non nutritive sucking and handling (ask mother to come in early to allow for some non nutritive sucking time before tube feed is started where possible).

If nutritive sucking and swallowing is noted without compromising the infant, allow infant to continue and score using the Modified Latch Assessment Tool

- Utilise a care plan to develop suggested session times to assist and encourage the infant to progress at nutritive sucking.
- The length of time and frequency of non nutritive sucking sessions are determined by how well the infant tolerates it.
- The football or cross cradle holds are often the best positions for the preterm infant. Ensure the mother and infant are well supported with pillows/blanket rolls

If not requiring pressure for respiratory support ensure the infant has a nasogastric tube not an orogastric tube, if possible.

Use of Pacifiers for Preterm Infants

When to use

- To assist the infant with maturation of sucking skills and stimulate gastric motor functions
- A Cochrane review found non nutritive sucking to be effective for pain reactivity and pain related regulation in neonates in term and preterm infants.
- Non nutritive sucking can also be done with EBM and the dummy or mother's clean finger, during tube feeding.
- Pacifier use assists in pain relief and organisational skills of the infant
- Promotes easier/more rapid transition from tube to full-suck feeding; accelerates the organisation and efficiency of sucking; builds association between sucking and satiation; and stimulates gastric motor function and facilitates digestion of enteral feeds.

Cleaning of Pacifiers

- Pacifiers should be cleaned at least once a day.
- Use sterile water and a piece of sterile gauze square to clean the dummy. Pacifiers that fall on the floor should be discarded.

Choosing a Pacifier

- Latex free and BPA free Pacifiers should be used
- Made in one piece so as to reduce choking hazard
- As a guide infants under 1800g should be using the preterm pacifier.

1. Walker M. Core curriculum for Human Lactation 3rd edition 2012
2. Kaleidoscope the Children's Health Network Guideline: Enteral Feeding – Initiation, Progression and Methods 2013
3. Mount Sinai Hospital Oral Immune therapy procedure 2012

4. See comment in PubMed Commons belowPillai Riddell RR1, Racine NM, Turcotte K, Uman LS, Horton RE, Din Osmun L, Ahola Kohut S, Hillgrove Stuart J, Stevens B, *Gerwitz-Stern Non-pharmacological management of infant and young child procedural pain*. A. Cochrane Database Syst Rev. 2011 Oct 5;(10):CD006275. doi: 10.1002/14651858.CD006275.pub2.

Nutritive Sucking at the Breast in the Preterm Infant

Nutritive sucking at the breast refers to sucking activity with milk transfer. The progression to nutritive sucking at the breast is determined by how well the infant progresses with “breast licks” non nutritive sucking and handling. Some infants may only need one or two sessions of breast licks.

The ideal time to commence a nutritive breastfeed session should be before a naso-gastric feed is due. The infant will need nasogastric supplementation until good milk transfer is established and it is essential the infant have adequate periods of rest in-between feeds.

Note: babies on high flow of <4 should be encouraged to have nutritive sucking.

The decision to remove some milk prior to feeding, should be made depending on the amount of milk the mother is producing and the vigorousness of the infant.

Hint: If the mother has a large amount of milk and strong letdown the infant can have breastfeed prone with the mother lying reclined on a lay back chair, which can reduce the risk of overwhelming the infant.

Characteristics of Nutritive Sucking

Visible audible swallowing

Milk transfer-characterised by visible milk in the mouth and softening of the breast

Occurs in a regular pattern with sucking bursts and pauses.

Establishing breastfeeding

- Preterm infants are often able to pace themselves better at the breast than bottle.
- The length of time at the breast will usually increase as the infant matures
- Parents will need guidance to develop a feeding plan that includes the infant’s individual needs and the wishes of the parents.
- The infant may need to be encouraged to feed regularly and may need waking if sleepy.
- It is critical that the health care provider be alert to feeding cues, however these cues may be subtle.

Subtle feeding cues may include; hands to mouth, rapid eye movements, rooting reflex, sucking noises, crying is a late cue.

The number of feeds in a 24 hour period may vary and should be part of the full assessment

Adequate sleep is an important component for the infant’s weight gain and development. Therefore avoid long periods of time learning how to breastfeed, most infants will breastfeed in 30-40 min.

- Assess for proper latch, good rhythmic sucking with frequent swallowing.
- Discuss and plan with the mother to decipher when the infant should be woken to feed.
- It is preferable that the infant feed long enough on one breast to receive the fat rich milk rather than feed from both breasts for a shorter period of time.
- Breast compression during the feed or when the infant starts to slow down may help increase the flow of milk and increase intake of fatty milk. Weight gain may improve when the infant receives this energy rich milk.

Using Modified LATCH Assessment Scale for breastfeeding in NICU

Feeding Assessment for the Preterm Infant

The following indicators may be used to assess a breastfeeding session. A complete assessment considering all indicators must be done when determining whether or not the infant will need to have supplementation. The infant's cues/signs will be more evident as the infant matures and approaches term and discharge. Ideally the infant continues to have a least 8 feeds in 24 hours. The assessment must be done with each breastfeeding session.

The modified LATCH has been developed to quickly assess a breastfeed. It aims to assist in communicating how an infant has fed at the breast and to give a guide to how much, if any, is to be given as a top up via a tube feed. Originally used in RNSH since 2005.

- Using the table below each area ABCDE is assessed during the feed and scored individually
- The score is written in the observation chart communicating the quality of the feed.
- The nurse needs to decide how much if any of supplementation to give based on the modified latch assessment, including mother's milk production.
- Timing alone is not enough to determine how well the infant breastfeeds.
- If at any time it is essential to know the oral intake a test weight should be done.
- Test weighting accuracy (using appropriate test weight scale) is supported by research and may be done if necessary to have an accurate estimate of the infant's intake

Modified LATCH Breastfeeding assessment tool					
Score	**A**	**B**	**C**	**D**	**E**
	Feeding Assistance	**Attachment**	**Sucking and swallowing (sucking efficiency and maturity)**	**Breast Drainage**	**Use length of feed and points A,B,C,D for assessment of the feed to determine top up**
0	Nurse assisted	Too sleepy or reluctant No latch achieved	none	No change	<5 minutes give full feed given by NGT
1	Nurse verbally guided	Baby has repeated attempts to attach to the breast or unable to maintain attachment	Intermittent sucking with occasional swallowing	A little softer	<10 minutes give half usual feed given by NGT
2	Mother attached baby unassisted	Grasps breast Tongue down Lips flanged Rhythmical sucking	Strong rhythmical sucking audible swallow	Breasts considerably softer following feed	>10 minutes No extra feed required

Modified from Jensen, Wallace and Kelsey (1994) LATCH: A breastfeeding charting system and documentation tool.
By Yvette Sheehy RNSH 2004

Cue Based/ Infant Led Feeding In the Preterm Infant

Once the infant is effectively breastfeeding without supplementation the decision can be made to let the infant determine the timing of the feeding. Infant cue based feeds should start when the infant is waking independently for feeds. The infant must maintain a minimum of 8 feeds in 24 hours, and the mother must commit to attend for 2-3 feeds a day. The mother could leave her mobile phone number for staff to contact her.

Cue based/ Infant led feeds may be offered as the infant starts to demonstrate hunger cues:

- Waking independently rapid eye movements
- Rooting
- Hand to mouth activity
- Sucking
- Vocal sounds/noises, fussing
- Crying, however is a late hunger cue
- Infants in the nursery should be stirred to wake if not awake by 4-4.5 hours.

A preterm infant should not be left for 5 hours consistently as this will not allow the infant to take the daily quota, this may also indicate that the infant is not coping with full sucking feeds, particularly if the infant is still under 40 weeks corrected age.

If the infant is not coping the tube can be reinserted. Reassure parents that this is developmentally appropriate and not necessarily a step backwards.

Benefits of cue based feeds

- Parents learn to identify and respond to their cues rather than depending on the clock or monitors.
- Parent will develop feelings of confidence and competence in providing infant care as they prepare for discharge
- Infants learn to control some aspects of their environment
- Earlier discharge
- Less nasogastric tube feeds

Other Considerations

Mother's milk supply should ideally range between 500-700 mL a day after the infant is 2 weeks old.

The mother's experience is a critical part of the assessment as she alone can compare every feeding session.

- If the infant is waking before the next scheduled feeding then consider feeding the infant on semi-demand schedule (no supplement) when the mother is available.
- The most appropriate method to supplement is via the nasogastric tube.

(If a bottle of EBM or infant formula is considered, the mother must be aware of the implications).

The mother must continue to pump following feeds to protect the milk supply as the infant is learning to breastfeed.

Feeding Plans

Feeding plans ideally should be made between the mother and nurse and documented on the care plan and revised at regular intervals. The plan may be revised during the developmental care sessions.

Feeding plans need to be followed for 24-48 hours before they are changed this allows time to assess the feeding.

Changes to feeding plans need to be documented in the clinical notes to substantiate changes made.

Supplementary feeds, Use of bottles Introduction of a bottle feed to a breastfed infant

An infant does not need to feed from a bottle before discharge if the mother's milk volumes are adequate for exclusive breastfeeding.

- The underlying principle will be to establish breastfeeding first before offering a bottle, following mother's expressed permission, to any breastfed infant.
- Established breastfeeding is defined by at least 3 successful consecutive breastfeeding sessions, without supplementation for at least 2-3 days.
- Bottle feeding will not be introduced unless the mother consents and only when it has been discussed with the mother the risks of introduction, and she is in agreement, and:
- The infant has reached 34 weeks corrected age
- The decision to offer bottles needs to be documented in the infant's notes

*If there are circumstances preventing the mother from being present at the hospital for a minimum of two breastfeeds a day, consultation with the team/lactation support nurse must be made, to provide support and a feeding plan to enable feeding to progress.

- While learning to breastfeed, bottle feedings should not outnumber breastfeeding in a 24-hour period
- Bottle feeding can be more difficult for preterm infants than breastfeeding. The mechanism for sucking a bottle is different than breastfeeding.

Test weights in Preterm Infants:

Test weights are appropriate for infants in the NICU or SCN after the mother's milk supply is established

Test weights can be useful when exact amount are needed for NGT supplementation.

Test weighting accuracy (using appropriate test weight scale) is supported by research and may be attended if it is necessary to have an accurate estimate of the infant's intake.

Procedure

- Change the infant's nappy prior to feed
- Weigh the infant with clean nappy on, prior to a breastfeed
- Allow infant to breastfeed
- Weigh infant following the breastfeed in exactly the same clothing/nappy on the same set of scales (**do not change nappy during the feed**)
- The difference in weight is approximately the volume of feed taken from the breast.
- Document in infants observation chart with the assessment of the breastfeed (Using 'Modified LATCH Assessment Scale')

Breastfeeding policy flow chart NICU/SCN